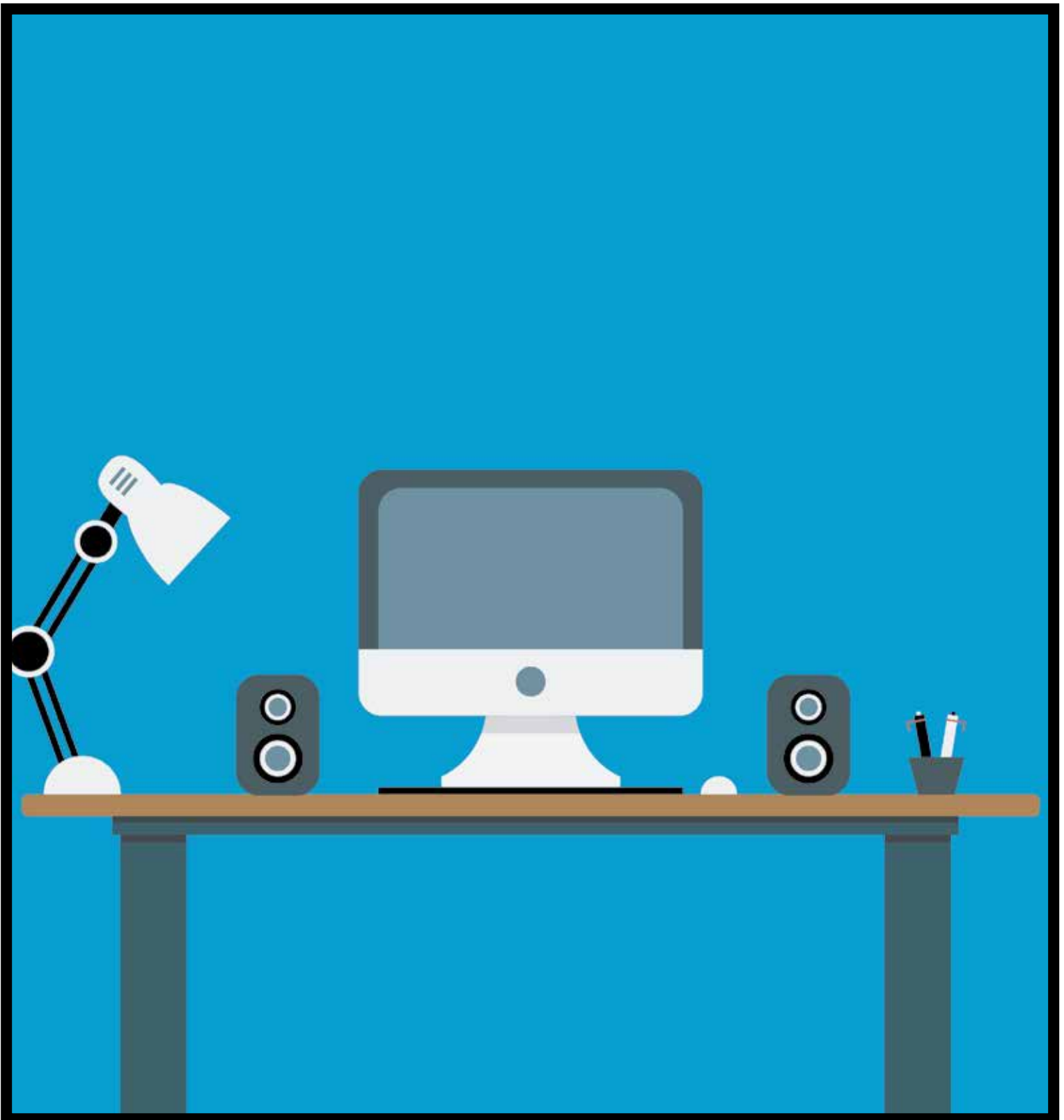


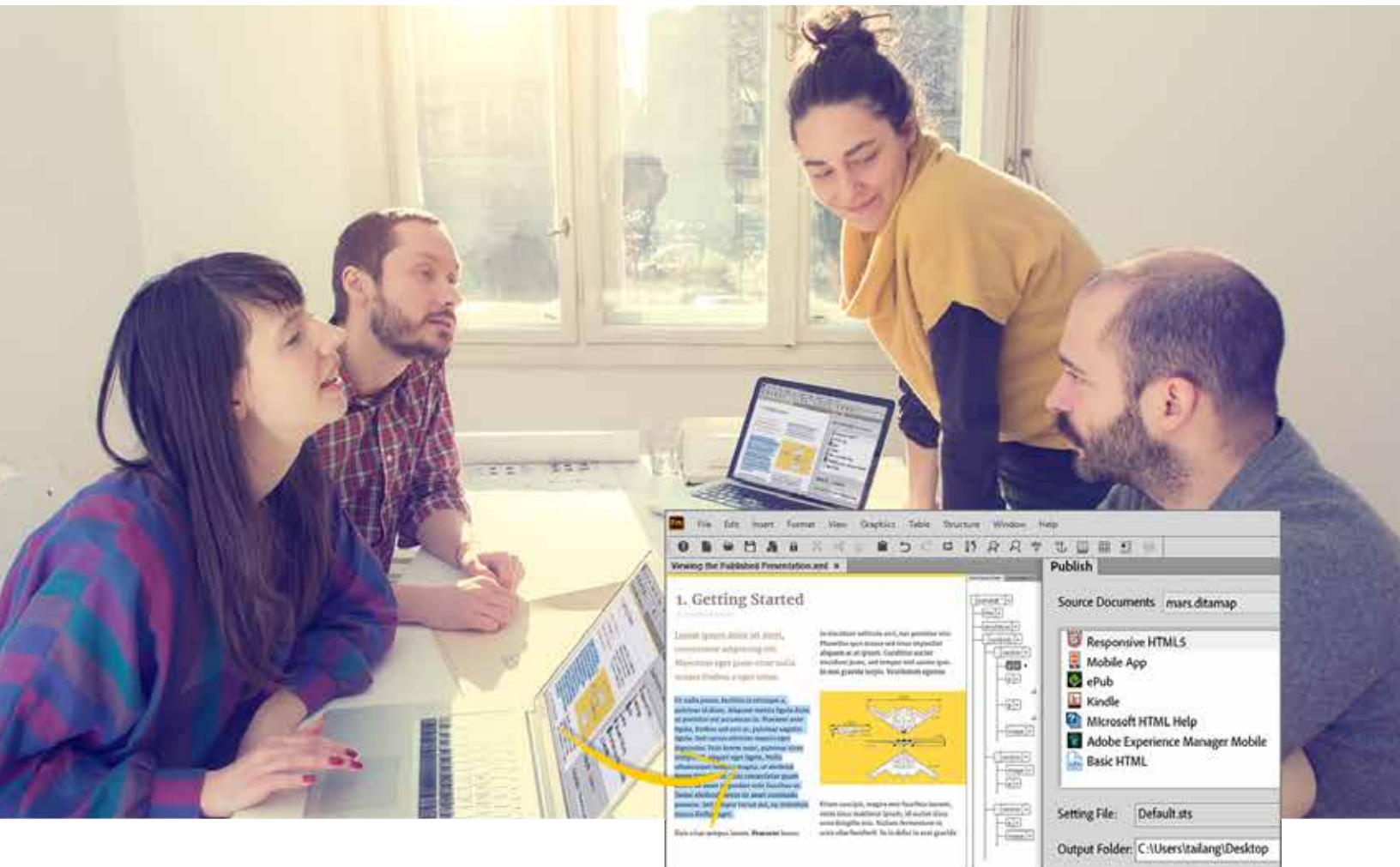
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*Journal of the Society for Technical Communication*





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# Technical COMMUNICATION

Journal of the Society for Technical Communication

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"When I first joined STC and started going to meetings, I quickly realized that STC provided some of the best networking and professional development opportunities for our profession. I was coming from working in a veterinary clinic, which is a totally different world, and I didn't have a lot of contacts in technical communication. Today, most of my work friends and some of my closest personal friends are a direct result of being an active volunteer in STC."

*Kit Brown-Hoekstra*



MY NAME IS KIT BROWN-HOEKSTRA AND

# I'M AN STC MEMBER

# Technical COMMUNICATION

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# INSTRUCTIONS FOR AUTHORS

## About the Journal

*Technical Communication* is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

*Technical Communication* publishes articles in five categories:

- **Applied research** – reports of practically relevant (empirical or analytical) research
- **Applied theory** – original contributions to technical communication theory
- **Case history** – reports on solutions to technical communication problems
- **Tutorial** – instructions on processes or procedures that respond to new developments, insights, laws, standards, requirements, or technologies
- **Bibliography** – reviews of relevant research or bibliographic essays

The purpose of *Technical Communication* is to inform, not impress. Write in a clear, informal style, avoiding jargon and acronyms. Use the first person and active voice. Avoid language that might be considered sexist, and write with the journal's international audience in mind.

Our authority on spelling and usage is *The American Heritage Dictionary*, 4th edition; on punctuation, format, and citation style, the *Publication Manual of the American Psychological Association*, 6th edition.

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not been published before, and that the manuscript is not under review elsewhere.

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- Page 3: Up to five keywords and a practitioner's takeaway (maximum 100 words) displayed as a bulleted list summarizing the practical implications of the article
- Page 4: Start of the manuscript
- References
- Tables and figures – Start each table or figure on a new page. If a manuscript is accepted for publication, provide high-resolution images.

Send the manuscript as an attachment to an e-mail message to the editor-in-chief, Sam Dragg (e-mail: [tceditor@stc.org](mailto:tceditor@stc.org)).

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Sam Dragga, Editor



# A Vital Oasis of Credible Thought

This issue of the journal offers four exceptional articles, each bringing perceptive and considered insight to the practice of technical communication.

Russel Hirst's "Stories from the Secret City: Ray Smith's Art of Narrative as Rhetoric" is a case study illustrating the rhetorical power of narrative to support the mission of a nuclear power organization as well as its local community and wider industry. In making the case for the telling of stories in technical communication, Russel adopts the techniques he examines and immerses us in the "narrative knowing" he espouses.

Joanna Schreiber's "Toward a Critical Alignment with Efficiency Philosophies" addresses the continuing challenge of technical communicators to explain their untapped potential contribution to their employers. Using observations of efficiency training sessions and documents generated in efficiency cultures, Joanna finds the language of efficiency management is a productive way for technical communicators to make the valued-added argument within their organizations.

In "The Image of User Instructions: Comparing Users' Expectations of and Experiences with an Official and a Commercial Software Manual," Menno de Jong, Bingying Yang, and Joyce Karreman report the results of two experiments with noteworthy findings. The

first experiment asked participants about the expectations of official versus commercial (third-party) software manuals and discovered that commercial manuals were viewed more positively. The second experiment involved participants using the two kinds of software manuals and discovered that participants worked more effectively when they thought they were using a commercial manual. While the influence of perception on performance might be unsurprising, it does offer a challenge to the creators of official communications and raises important questions about the public perception of all official sources.

Lisa Meloncon's "Embodied Personas for a Mobile World" reviews earlier studies about personas and, using a case study, proposes a revised and updated version of personas that is based less on demographic generalizations and more on real people of various levels of ability operating with specific goals and purposes in mobile environments. Lisa also offers a heuristic to guide implementation of the change she proposes.

As a reminder, none of these inspired articles emerged from the minds of their authors in the version that is published here. Each article was thoughtfully reviewed by three anonymous and critical reviewers who offered supportive comments but also questions and objections that

guided the authors to major and minor revisions of their thinking. For example, about Russel's article, one reviewer noted,

My main concern about the article is that it reads like an encomium—even a eulogy—as if celebrating the life of someone who has died or has achieved some milestone in life where uncritical praise on a special occasion is deserved. This article, however, is not offered as a eulogy or encomium but as a rhetorical analysis of the *narrative practice* of a particular communicator. The focus is supposedly not on the person or personality of the communicator but on his rhetorical techniques. Although there is certainly some attention given to classical rhetorical concepts and how they are deployed in Smith's narrative practice, the focus of the article strikes me as primarily Smith himself, Smith's character.

In revising, Russel tried to address this objection:

Reviewer 2 is concerned that the article praises Smith too much. Actually, Reviewer 3 shared this

concern, and I did go back and look for places to tone down the praise where I could. For example, I changed the line referring to Smith's manner of speaking from "friendly, relaxed, and authoritative" to simply "friendly and relaxed." But the overall description of Smith and his art can't shift much; it is true description and integral to the article. Smith is a version of Quintilian's ideal orator—stronger in natural genius and extensive practice than in studied theory, but still the "Good man skilled in storytelling," so he's a figure described as admirable; those are the figures we're motivated to imitate; his ethos is actually part of the rhetorical instruction here.

Similarly, a reviewer of Joanna's article noted,

I find the development of the manuscript somewhat confusing. The bulk of it is a bibliographic study of previous work on management efficiency philosophies and their relationship to TC work, but it is not always clear what is the author's thinking and what comes from others. The author's stated main goal – to "re-contextualize" findings from two studies – does not in the end seem very useful to practitioners, mostly because almost no workplace examples are given of how Lean Six Sigma (LSS) can be used to establish the value of TC work.

And Joanna instituted several key changes as a consequence, explaining,

The original manuscript relied extensively on a review of management literature to establish the territory of this article. Reviewers found this both distracting and unnecessary for practitioners. Further, the example document I used insufficiently supported larger points.

In the revised manuscript, I ground the article with an IRB-approved study of Lean trainings. The 25 plus hour study over several months provides both additional evidence and an extended example.

I also added examples throughout the article to illustrate my points and adjusted the writing style to be less abstract and philosophical.

I added a second document to bring the development of efficiency culture (Lean training observations) into conversation with an example of an internal structural document and a customer-facing document.

These two documents provide examples of places where practitioners can make their value visible to management.

The article by Menno, Bingying, and Joyce was guided by this comment from a reviewer:

My main revision suggestion comes from a sentence by the

authors that comes late in the article: "The research was primarily designed to focus on image, not on content quality." In other words, the main thrust of this article was to assess the effect of perceived source (official v. commercial) of the manual. However, the analysis did not control for the actual content of the manuals themselves. It seems as if the authors are comparing official v. commercial for two different sets of content, but they collapse both sets of content into a single analysis rather than keeping them separate. I would prefer for their results analysis to keep those two sets of content separate.

The authors considered this advice and adapted it through several important changes of wording:

We think it is better to lay the cards on the table, and make explicit that the differences found between actual content versions should be treated with a lot of caution. We reread our manuscript, and found several instances that needed revision to express this message more unambiguously:

- In the Abstract (Results), we deleted the sentence "(even though the content of the official manual worked better)"
- In the Introduction (last paragraph), we replaced the phrase "and investigated the effects of both ..." with



Sam Dragga, Editor

“to investigate the effects of perceived source ...”

- In the introduction of Study 2 (first paragraph), we replaced the sentence “These experiences may be triggered by the actual content of the manual and by the perceived source” with “These experiences may be triggered by the perceived source of the manual, possibly in relation to its actual content.”
- In the introduction of Study 2, we included three sentences to explain why we included actual content as a variable and make clear up front that a comparison of the effects of actual content is beyond the scope of our research (and why).
- In the results section of Study 2, we removed an explicit comparison between the effects of perceived source and actual content (“There was an opposite effect ...” = “There was also a main effect ...”)
- In the results section of Study 2, we immediately qualify the only significant effect of actual content (“As said earlier, this result must be treated with caution, as cannot be sure of the representativeness of the official and commercial manual excerpts for the complete manuals.”)
- In the conclusions of Study 2, we removed the sentence about the effect of the manual content

(“Regarding manual content, an opposite effect was found: the official manual worked significantly better than the commercial one.”)

A reviewer of Lisa’s article advised changes in organization and emphasis:

I suggest that the author revise the Implications section to list the benefits (the bulleted list) first.

Then, the author should say that doing observations and interviews to develop personas for a specific project is the best way to get realistic and relevant personas. That’s a key point. It should not be relegated to a parenthesis inside another sentence.

Then, the author should say that even if doing that user research isn’t possible, technical communicators can take advantage of what the author learned in the author’s case study observations and interviews. I suggest that it is important for the author to repeat that the suggestions in this paper come from a case study in which the author did meet the users.

So the conclusion is not that this is best when you can’t do user research. The conclusion is that remembering these three factors is always important. Incorporating these three factors can help you develop useful personas whether or not the technical communicators

(or others on a team) can do user research.

As Lisa explains, she adopted this proposed change:

I have taken this advice and re-organized the implications section to bring to the forefront the benefits of the re-conceptualization of personas that I proposed and then to make clear that these ideas can be used when you can do user research with the users and even when you cannot.

I mention these examples of revision to emphasize how essential the review-and-revise process is to the clarity and accuracy of ideas finally made public. The opportunity for reviewers to consider ideas prior to worldwide distribution and to solicit more credible evidence for claims, to encourage more rigorous methods, to question interpretations of findings, or to propose changes to wording, organization, or emphasis all make for more cogent and substantive contributions to the knowledge of the field. This filtering of ideas by specialists yields better ideas. And in the hierarchy of ideas, I believe filtered ideas ought to be considered the closest to wisdom itself.

The proliferation of immediately available unfiltered information, however, especially in assertion-size chunks, has created a privileged position of ubiquity for the provocative but unsupported claim. And this privileging of unsupported claims

makes investing time and resources in the meticulous gathering and analysis of evidence a more and more imperiled effort. At little or no cost, inaccuracies and falsities thrive in attention-getting superiority to certainties and actualities. Strident conjectures from prejudice sit equal to statistical probabilities and logical conclusions. Expedient distortions and exaggerations eclipse delicate distinctions of meaning.

In a boisterous environment of shrill voices and striking misinformation, this research journal is a vital oasis of conscientious and judicious thought and, I hope, a priceless resource for the cautious and scrupulous technical communicator.

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# On The Cover



For the *Technical Communication* journal cover, I wanted to go for a simple design that would also have something to do with the subject of minimalist writing techniques. Technical communication largely deals with computers, so I wanted a simple computer to go on the cover. I decided to place the computer inside of a room and placed it on top of a desk with speakers, pens and a lamp. I hoped that the cover would feel more inviting and friendly with the addition of these objects.

## About the Artist

**Aram Johnson-Wilson** is an undergraduate student at Kennesaw State University and is studying Interactive Design. This major focuses on visual design and user interface design. Aram is passionate about graphic design and user interface design and hopes to continue working with graphic design in the future. He is available at [ajohn550@students.kennesaw.edu](mailto:ajohn550@students.kennesaw.edu).

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# Stories from the Secret City: Ray Smith's Art of Narrative as Rhetoric

Russel Hirst, University of Tennessee, Knoxville

## Abstract

**Purpose:** To help readers better understand the craft and the rhetorical power of narrative as used in corporate and community settings—and to illustrate strategies that rhetorical storytellers may employ.

**Method:** This article analyzes storytelling by means of a case study in the art of narrative as used in support of an organization, community, and industry. The organization is Y-12 National Security Complex, which makes parts for America's nuclear arsenal and does research and production in nuclear materials for medicine, biology, industry, and nuclear energy and propulsion. The community is Oak Ridge, Tennessee and environs. "Industry" references the nuclear industry in Oak Ridge and beyond, including its partnership with the U.S. military. The subject of the case study—the person whose narrative art is here analyzed—is Ray Smith, official historian of Y-12. The material analyzed comes from publications by Smith, notes from interviews with him on multiple occasions, and many sessions of listening to his stories both in person and via recordings (documentaries, presentations available on web sites, etc.).

**Results:** This study finds that Smith's stories connected with the Manhattan Project, and the years preceding and succeeding it, constitute a model set of narratives displaying the rhetorical power of storytelling in an organizational setting.

**Conclusion:** By studying the ways narrative is successfully used in professional settings, we deepen our understanding of rhetorical storytelling as well as our ability to use it. This skill has wide application to contexts of technical and professional communication. It can be used to elevate public opinion about a corporation, community, or industry; to breed confidence among consumers and investors; to construct leadership models for managers; to inspire and motivate employees—and in virtually any other sort of rhetorical enterprise.

**Keywords:** narrative, storytelling, rhetoric, history, nuclear

## Practitioner's Takeaway:

- Research in communication theory, cognitive science, and social science shows the deep influence of stories upon the ways people think and the attitudes and worldviews they develop.
- Technical/professional communicators can use narrative—stories—as powerful rhetorical tools to promote the interests of corporations, communities, businesses, and organizations of all kinds.
- One way of developing our skill at creating effective stories is to analyze the craft of master storytellers—such as the professional historian profiled in this article.

*Thought flows in terms of stories—stories about events, stories about people, and stories about intentions and achievements. The best teachers are the best storytellers. We learn in the form of stories. We construct stories to make sense of events. . . . The brain is a story-seeking, story-creating instrument.*

—Frank Smith (62–63)

*A great storyteller is even more important to an institution than a great code-writer, an accomplished research scientist, and maybe even a talented CEO.*

—Michael Malone (1)

*If history were taught in the form of stories, it would never be forgotten.*

—Rudyard Kipling (26)

## Introduction

Pull up a chair; make yourself comfortable. Let me tell you some stories.

During World War II, my dad was a gunner with an anti-aircraft artillery battalion, the 210<sup>th</sup>, protecting the American naval base at Subic Bay in the Philippines. The day after graduating from high school, he had volunteered for military service. He married my sweet mom, who was just 17 years old at the time, a month before going overseas. While at Subic Bay, he worked diligently, during off-duty hours, to build up a little nest egg by crafting and selling metal watchbands. These were in demand because leather watchbands rotted away in that tropical climate. Dad cut his watchbands out of the aluminum fuselages of Japanese planes his battalion had shot down.

McArthur and the other American generals had made plans—Operation Downfall—for a land invasion of Japan, and it's likely my dad would have been involved in invading the homeland of a fierce Imperial army and a fortified, determined populace. Predicted casualties for Allied forces were in the hundreds of thousands; predicted casualties for the Japanese were in the millions.

But on August 6<sup>th</sup> and 9<sup>th</sup>, 1945, America dropped on Japan the most devastating weapons the world had ever seen, killing and injuring tens of thousands in an instant—and the enemy surrendered. The land invasion was cancelled. World War II, which had claimed 60

million lives, was over. Dad came home safe to Mom—and I was born a few years later.

Now that, in short form, is a Hirst family story—connected to a much bigger story. All of us are connected to that bigger story, and we all have our ways of making sense of it, processing it, forming and adjusting our values and feelings in reference to it.

Stories help us do this kind of thing. Cognitive psychologists tell us that hearing and reading stories is a major way in which humans make sense of their world and position themselves in it. We also listen to our own internal narratives about our lived experience, over and over. In our conscious and unconscious minds, we weave stories into a conceptual fabric.<sup>1</sup> This ever-expanding tapestry forms, in large measure, our worldview. It thus profoundly influences a host of our cognitive functions, such as our cause-and-effect thinking. Of course, it is not stories alone that weave this tapestry; we also read statistics, hear reasoned arguments, look at scientific facts, etc.<sup>2</sup> But stories loom large in our psyches and influence our thinking and behavior in deep ways.<sup>3</sup> This fact has inspired the recent swell of interest in narrative theory in many fields, including literature, sociology, psychology, public relations, management, rhetoric, and technical communication.

Technical communication has always been linked strongly to engineering, industry, and science—and thus to logical, clearly structured, demonstrative discourse. For this reason, scholars in our field, when entering the terrain of something apparently so subjective and unscientific as narrative theory, have

1 See Pinker, "Matrix, Revisited": "Cognitive psychology has shown that the mind best understands facts when they are woven into a conceptual fabric, such as a narrative, mental map, or intuitive theory."

2 As communication theorist Walter Fisher has pointed out, humans use both ways of presenting and processing "good reasons" for things: the traditional rhetorical paradigm or "rational world paradigm"—which relies upon reason, rationality, science, and reference to the knowledge of experts—and the "narrative paradigm." This alternative paradigm is really a "dialectical synthesis" of the rational and narrative frameworks, relying upon "narrative probability and narrative fidelity"—in other words, upon stories which strike us as true and explanatory of reality, based upon our own life experience, personal ways of judging value, and constructs of reality as well as science, reason, etc. See "Narration as a Human Communication Paradigm" and other works by Fisher.

3 See Rhodes and Brown (2005, p. 8): "... psychologists of various hues have characterized narrative as 'a primary cognitive instrument' (Mink, 1978, p. 131; Polkinghorne, 1988, p. 1) that underlies our thinking and emotional life (Rappaport, 2000, p. 40), as an agent of both memory (Bower & Clark, 1969) and meaning (Bruner, 1990). In organization studies, Boland & Tenkasi (1995) have argued that narratives constitute the basic organizing principle of human cognition."



## Stories from the Secret City

often felt it wise to explain and legitimize their move. I am no exception. A good, early example of this approach is Ben and Marthalee Barton's "Narration in Technical Communication" (1988), wherein the authors describe the unjust devaluation of narrative for technical communication and then extoll its pervasiveness and many advantages. Another valuable example is *Narrative and Professional Communication* (1999) in the ATTW Contemporary Studies in Technical Communication series; that volume is filled with scholarship by leaders in our field who endorse and analyze a wide range of uses for narration in technical communication—including its use as a vehicle for case studies, as I use it here.

In this article—although I have just described some scholarship on narrative in technical communication, and I hereafter synthesize some relevant cognitive, narrative, and rhetorical theory in the main text—I relegate to footnotes most of my further reference to scholarly work in these areas. I don't foreground an extensive literature review; instead, I hew more closely to the power of story itself. In fact, you'll see that my method is to present and analyze Smith's storytelling art while using my own narrative framework and techniques to engage you in the very kind of "narrative knowing" I am describing. That's why I began with a story. I will now use that story to offer a quick tutorial on the relationship of storytelling to rhetoric—especially history-based storytelling and its relationship to the traditional core of rhetorical purpose: persuasion.

Like any story based on history, the story that opened this article operates through selection and structuring of historical facts. I selected facts to impress upon you my dad's humanity and industry, and his love for his family, hoping you would identify with those things. I selected the facts about the planned land invasion of Japan, and the atomic bombings that cancelled it, to show a diminishing funnel of death and destruction—from millions to hundreds of thousands to tens of thousands, with the atomic bombs marking the endpoint in the funnel of destruction.

This did not make a logical argument; it made, rather, a rhetorical one. It was a strategic psychological effort designed to get you to accept, or at least to make a little more room in your psyche, for the rightness of using those terrible weapons at that time. According to Aristotle, who had some persuasive ideas about how humans persuade each other, rhetoric operates

not by strict logic, but by psychological impression.<sup>4</sup> It addresses simultaneously the listener/reader's engagement with reason (*logos*), emotions (*pathos*), and sense of the virtue and reliability of the speaker/writer and of the characters portrayed in his narrative (*ethos*), one way or another.

If you're dubious whether storytelling has rhetorical power, consider Harriet Beecher Stowe's *Uncle Tom's Cabin*. It is widely recognized as having exerted a powerful rhetorical influence to convince thousands about the evils of slavery and the imperative to abolish it. When President Lincoln met Stowe, he is reported to have said, "So you're the little woman who wrote the book that made this great war!"

Story is a major resource of the rhetor. You perceive, perhaps, my rhetorical purpose in using, just now, that story snippet about Stowe and Lincoln. Many stories or examples were available to reinforce my point about rhetorical storytelling, but I chose that one because I guessed you likely sympathized with the terrible plight of 19<sup>th</sup>-century African-American slaves and recognized the American Civil War as necessary to free them—even though that war took three or four times as many lives as the atomic bombs.<sup>5</sup>

Rhetorical persuasion using the vehicle of story is the essential strategy of *homo narrans* (Fisher, 1984, p. 270), man or woman the story-making animal.<sup>6</sup> We all do this, whether by nature, by socialization, or (I think) both. But what sort of people do this most effectively? Well, certainly, Aristotle would say again, it is those who study and practice the art of oratory *and therefore of narrative* for use in politics, law, the military, and other contexts of public leadership. And if an enlightened, time-traveling Aristotle could have met Stowe, read her book, and gauged its effect, he would have added "literary rhetoricians" to the list.<sup>7</sup> But we must also include what the Greeks called the *histor*, the "learned and wise one"

<sup>4</sup> See his *Rhetoric*, throughout.

<sup>5</sup> According to latest estimates, the American Civil War claimed about 750,000 lives—most of them, of course, American lives: [http://www.nytimes.com/2012/04/03/science/civil-war-toll-up-by-20-percent-in-new-estimate.html?\\_r=0](http://www.nytimes.com/2012/04/03/science/civil-war-toll-up-by-20-percent-in-new-estimate.html?_r=0).

<sup>6</sup> See Macintyre, *After Virtue*, p. 216: "A central thesis then begins to emerge: man is in his actions and practice, as well as in his fictions, essentially a story-telling animal. He . . . becomes through his history, a teller of stories that aspire to truth."

<sup>7</sup> Actually he'd already done it, insofar as he recognized the rhetorical uses of *Poetics* in his book (lecture collection) on that theme, and in *Rhetoric* itself (also a collection of lectures). But certainly, recognizing a woman as an expert in this realm would have been new to him.

who finds out and conveys wisdom through *historia*, stories about the past. The skilled historian is an essential guide as we weave together our conceptual fabric of the broad tapestry of human experience.

## The Storyteller

The main story I want to share with you in this article dwells upon a master storyteller, Ray Smith, official historian of the Y-12 National Security Complex in Oak Ridge, Tennessee. That is the place that produced the uranium-235 used in the weapon that brought my dad home safe from the war. Stories weave in to one another, as I ponder in this article.

Although Ray Smith's formal education is in electronics, building maintenance, and personnel management—he is self taught as a historian—he is a skilled user of narrative as rhetoric, which he wields in support of his organization (Y-12), his community, his country, and the nuclear industry generally. I said this to him one day and he protested, “I tell stories just because they are interesting and enjoyable!” Ah yes; *interesting*, from Latin *inter est*, “it is within”; Smith knows that effective stories operate by showing what is within characters in such a way that we perceive correspondences within ourselves; this is the rhetorical principle of *identification* as expounded by Kenneth Burke,<sup>8</sup> the most famous rhetorician of the modern age. And enjoyable? Yes, *delectare*, as taught by Quintilian two millennia ago: The strategy of affording enjoyment to listeners as a means of sustaining their attention and making them more amenable to our rhetorical appeals—this is one of the most powerful persuasive elements of oratory. Smith is adept in these strategies.

The references to Burke and Quintilian are just some of my notes on correspondences between Smith and various rhetorical theorists; as I mentioned, his art arises not from formal study but from his nature and practice as *homo narrans*. He's not familiar with Burke or Quintilian; he has developed his art of rhetorical storytelling independently, just as Newton and Leibniz each invented calculus. And in fact, this is the state of things described by narrative theorists of all kinds: The ability to understand and make stories comes packaged with human cognitive equipment and develops naturally as we observe, experience, and mentally+emotionally

process the drama of life. However, as in all things, people develop different levels of power.

It's not easy to quantify the effects of Smith's storytelling art or power, since its main manifestation is in the strength of the broad culture of appreciation, respect, and trust in connection with Y-12, Oak Ridge, and American nuclear power that he has developed during his years as historian—and the influence of his video documentaries,<sup>9</sup> his publications, his work with historical societies, and his thousands of guided tours and lectures, given both for the public and for visiting dignitaries from around the world. My guiding question for this article is simply, “How does he do it?” How does he get contractors to do what his bosses need done—just by telling a story? How does he move the Manhattan Project National Historical Park from desire to reality? How does he get people who are uncomfortable with anything nuclear to adjust their worldviews? As I discuss in this article, his most effective tool for doing such things is narrative used as rhetoric—rhetoric that elevates the reputation and culture of an organization, a community, an industry, and a nation, particularly in terms of its nuclear military philosophy.

There are, of course, many “counter-stories” about Oak Ridge, the Manhattan Project, and Things Nuclear. For an exposition and analysis of such stories focusing on Oak Ridge, in a rhetorical effort distinct from Smith's, see Freeman's *Longing for the Bomb: Oak Ridge and Atomic Nostalgia*. For a broader treatment of nuclear history, and again a rhetorical agenda distinct from Smith's, see Johnson's *Romancing the Atom*. An analysis of such counter-stories, and the battle for the collective memory of Oak Ridge, the Manhattan Project, and America's nuclear program, is beyond the scope of this article. So is the vast debate about the ethics and/or effectiveness of nuclear deterrence. My purpose here is to present and analyze one very instructive case study in the art of narrative as rhetoric.

## John Hendrix, the Prophet of Oak Ridge

Smith has a thousand stories to tell. He has told them in schools, in U.S. Congress, in tours, at universities, at ceremonies, and in scores of other settings. And nearly every time I've heard him speak about the history of Oak Ridge and the Manhattan Project and associated

<sup>8</sup> See Burke on *Identification in A Rhetoric of Motives*.

<sup>9</sup> Smith's video documentaries are available at <http://www.y12.doe.gov/about/history/video-gallery>

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histories, he tells, early in his presentation, the John Hendrix story. By “the” John Hendrix story, it should be clear by now, I mean Smith’s version of it, based upon his careful research—and woven and worded according to his narrative art in service of his rhetorical purposes. This is the basic formula for all human story making—though we don’t all take the same care that a serious historian does during research, nor do we all become so skilled as story crafters.

Get online and enter “Ray Smith, Hendrix Story” into your favorite search engine to find any number of presentations beginning with this story. Smith speaks in his characteristic East Tennessee style, friendly and relaxed. Here’s the story in short form as he tells it in Part One of his book on Hendrix; his verbal tellings of this story are similar:

Around the turn of the 20<sup>th</sup> century, John Hendrix’s youngest child died. His wife blamed him for the child’s death, as he had corrected<sup>10</sup> the young child a couple of days before she died. His wife took the other children and went to Arkansas, never to return. Hendrix was very upset by this and prayed to God.

During one prayer he heard a loud voice telling him to sleep on the ground and he would learn the future of this place. Hendrix did as the voice told him, and it must have been in the winter because one story tells of his hair being frozen to the ground. When he returned from 40 nights sleeping on the ground he had tremendous stories to tell, and he told anyone who would listen.

He said,

*I’ve seen it. Bear Creek Valley someday will be filled with great buildings and factories, and they will help toward winning the greatest war that ever will be.*

*And there will be a city on Black Oak Ridge. The center of authority will be on a spot that is middle-way between Sevier Tadlock’s farm and Joe Pyatt’s place.*

<sup>10</sup> Note Smith’s word choice. In another account of Hendrix (<https://www.youtube.com/watch?v=BdaB8fValps>), a role-playing actor uses the word “spanked.” But Smith’s choice is rhetorically smarter. “Correcting” the child foregrounds Hendrix’s legitimate action as a parent and helps deflect a negative reaction the listener might have toward Hendrix from the very beginning of the story. But even more importantly, it plants a subconscious seed in the listener’s mind: there are incorrect and correct ways to process the story of Hendrix; be alert for what is correct.

*A railroad spur will branch off the main L&N line and run down toward Robertsville, and then it will branch off and turn toward Scarboro. It will serve the great city I saw in my vision.*

*Big engines will dig big ditches and thousands of people will be running to and fro. They will be building things, and there will be great noise and confusion, and the earth will shake.*

*I’ve seen it; it’s coming.*

In the video versions of this story—documentaries Smith has produced—photos and video clips from 1943–1945 display as he narrates, showing the heavy earth-moving equipment in Bear Creek Valley, the Y-12 buildings going up, the railroad line, the Department of Energy’s “center of authority” in Oak Ridge—and, to the words “the earth will shake,” a video clip of the Hiroshima blast, complete with reverberating sound track.

Smith’s book, and his characteristic telling of the story, goes on:

John Hendrix’s vision occurred just after 1900. He died in 1915. The Manhattan Project came to this area in 1942.

Y-12 is located in Bear Creek Valley, and uranium-235 used in the first atomic bomb was obtained from the calutrons at Y-12 and helped win World War II.

The city of Oak Ridge is located on Black Oak Ridge.

The DOE federal office building (seat of authority) is located between where the Tadlock farm and the Pyatt place once stood.

There is a railroad spur that runs right down the edge of what was once John Hendrix’s property.

Smith’s book proceeds to detail other Hendrix prophecies that came true, such as his vision of air transportation of cargo by huge airborne vehicles (supplemented in one video documentary by footage of a B-29 bomber, reminding viewers of the *Enola Gay*), his prediction of the destruction of the mental

hospital where he'd been temporarily imprisoned (it was soon thereafter struck by lightning and burned to the ground), and other prophecies. In his oral storytelling, after referring to the destruction of that mental hospital, Smith chuckles and adds, "People probably paid more attention to John after that." (Note to subconscious: *Maybe I, too, had better pay more attention.*)

Smith's book goes beyond his usual treatment of Hendrix in public presentations, recording interviews with descendants of Hendrix and of people whose parents or grandparents knew him, as well as citing various written accounts about Hendrix. Not forgetting the power of Quintilian's *delectare*, Smith adds humorous anecdotes about Hendrix:

A many a time after we had hauled logs to the John Dover Saw Mill, Uncle John [Hendrix] would tell the fellers, "My name is Levi Tuffi, the tuffest man that ever breathed a breath of fresh air. I clum a thorn tree with no pants on, walked a barbed wire fence with no shoes on, I squoze a she-bear till his brains were all on the ground. Now, if you ever want to know where I live, I live on Tuff Street, the further you go down the tuffer it gets and I live in the very last house."<sup>11</sup>

In addition to the sheer effect of the fun and memorability of such accounts, these details serve to make Hendrix more 3-dimensional for the reader/listener, and to reinforce the sense that people knew him and remembered things he said—including accounts of his visions. As for the spell in the mental hospital: Smith includes an account explaining that it was Hendrix's second wife who had him committed, not because of the visions *per se*, but because he'd ceased to do much work; he'd been spending all his time praying in the woods and reading the Bible.

This choice of story is perfect for Smith's rhetorical purposes. I wanted him to discuss his strategy with me, so I asked him about it. He replied as usual, "Well I just tell it because it's history, and it's interesting!" On another occasion he said, "I want people to come to their own conclusions." In the introduction to his book, he expands:

The John Hendrix Story has intrigued me from the first time I heard it mentioned. I now use it routinely to introduce visitors to Oak Ridge. It gets their attention and breaks the ice. Many who come to our city are at the least uncomfortable with the scientific nature of our history. The place where the uranium-235 was separated for the first atomic bomb used in warfare is already a mysterious place to many. Often, visitors are hesitant to ask questions, as they do not want to appear to lack knowledge of Oak Ridge, yet they rarely know very much except the name and that there is some attachment to the atomic bomb . . . this story seems to bring the conversation to something they can ask questions about or can more easily discuss than the technical aspects of what it takes to make an atomic bomb (Smith, *Hendrix* 3).

This is more helpful, but Smith's strategy is deeper than this. Here's why I think his telling of this story, up front and often, is so effective. It immediately weaves a deep, vital story thread into the minds and hearts of listeners/readers, opening up a new "sense making" avenue for them. This is the major phenomenon described by many scholars working in narrative theory.<sup>12</sup>

There are naturally many different levels of need or urgency to make sense, depending upon the elements and the stakes involved in narratives. For many of us, the more confusing, devastating, and frightening the elements of a story, the more urgent our need to make sense of that story in connection with a Higher Power. Most listeners are indeed uncomfortable with what they know of the atomic bomb story because of their internal vision of the terrible destruction wrought by the bombs dropped on Japan. But what if the development of the atomic bomb by America at that time were actually part of God's providence to save humankind? This proposition, like any that posits involvement by God, can never be proven—but it can be profoundly suggested, woven deep into the story fabric as a way to make sense of things. And whereas this element of sense might fail to register or convince if delivered as a straightforward proposition, it might work its way

11 William Westcott's memory of what Clay Seals said one day while riding in a car with his brothers and their father, Manhattan Project photographer Ed Westcott. Seals had known Hendrix, worked (logging) with him, heard him talk about his prophecies, and was with him when he died. In Smith's *John Hendrix*, pp. 13–14.

12 For example, in Rhodes and Brown (2005, p. 172): "There is a broad consensus among narrative scholars that sensemaking refers to processes of narrativization (MacIntyre, 1981), that our versions of reality take narrative form (Bruner, 1991), and that stories are means of interpreting and infusing events with meaning (Gabriel, 2000)."



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to levels of acceptance in story form, processed by the sense-making psyche of *homo narrans*.

The Hendrix story tells us the prophecies of a man, decades before the start of WWII, who saw—in visions, in his mind, however he saw them—clear details connected with the future construction of Y-12. And he understood from his visions that Y-12 *will help toward winning the greatest war that ever will be*. Now that we’ve heard this story element, we have no choice but to process it in some way; it’s too striking to be left alone. Simply to regard Hendrix as crazy does not account for his visions, which he told to multiple people and which came true. Even if he were crazy, as today we might call nearly every prophet described in the Bible, how could he know such things without some kind of real glimpse of the future—and who but God could afford such a glimpse? Well, we don’t know, but the thread is laid, or to use Smith’s metaphor, the ice is broken. So, our psyche must engage with the story and somehow work it in to the overall fabric of the Story of the Atomic Bomb. The Hendrix story tugs upon the most fundamental thread in the Story that we must all weave together. Story engages our story-making minds. As we process our internal questions and narratives we might hear things like: “So much promise in peaceful use of atom, but also such devastating power, such suffering by the people of Japan, such danger around us now! Where is God in all this?”

The fact that Hendrix saw in vision things that corresponded strikingly to the building of Y-12 and its mission to end the great war suggests—at some level, for many people—that where God is in all this is right here with us. As we weave that sense into the fabric of the story—even tentatively—transformed patterns start to emerge.

Our storyteller knows this. That’s why he tells and retells the John Hendrix Story before plunging in to his other stories.

### Rhetorical Storytelling

The example above takes us further than my personal story did into the terrain of narrative as rhetoric. Like any other rhetorical user of stories, a story-using “history rhetor” has a proposition<sup>13</sup> in mind, such as “God’s hand was in the Manhattan Project, helping humankind

find a way to end a horrific war.” But he does not state the proposition directly, as if in a slogan to shove at opponents, or even in a philosophical treatise. These attempts to persuade, he judges, would be minimally effective in developing attachment to the proposition in the minds and hearts of other people. So he delivers the proposition in the form of a story, or embedded in a story, we might say. The story, like all history and indeed all discourse, is a human-made thing, but not a “fabrication” in the negative sense of that word. In the mouth or pen of an ethical historian, anyway, it is a legitimate account based on ample testimony. The craft of it, in terms of producing its rhetorical effect, lies in selection and sequencing of witnessed and recorded things, and in effective wording of them (corrected, not punished or spanked) to deliver a striking, memorable story from which the proposition emerges in the listener’s consciousness “on its own,” seemingly—affording the listener a greater sense that she has come to the conclusion on her own. As Smith says, he wants people to come to their own conclusions—because these are the only ones that really shape their worldview, values, commitments, and actions.

Smith’s own worldview, values, and commitments have led him into more forms of community and compassionate action than I can here describe, including his service as a volunteer chaplain and post-trauma counselor for the Oak Ridge Police Department, leader in Boy Scouts of America, worker for United Way and Tennessee Children’s Home, elder in his church, and so on. Indeed, one element that fueled my interest in this man’s historical-rhetorical work was the paradox—as some people might regard it—of someone who exhibits so much charitable, spiritual activity and at the same time works at a place that makes nuclear weapons. (More than working there, he is a chief promoter of the value and culture of the place.) But Smith’s philosophy of life is very coherent, descriptions of which I have drawn out of him during many conversations.

Let me here do something unusual: I will list some of a man’s convictions in the form of bare assertions or propositions. Undoubtedly, in this form they will strike you as mere abstractions, slogans, or *sententiae*:

There is a real war ongoing between forces of good and evil—and both forces are more vast and deep than most people imagine.

<sup>13</sup> Or a configuration of multiple propositions.



The worst forms of evil don't respond to reason or negotiation. They are defeated or kept in check only by power. That is why we cannot be secure without Power—nuclear weapons, in particular.

America has prospered because of scientific and technical innovation, yes, but even more importantly because of the character and sacrifice of its people.

These are examples of Smith's more general convictions; he also has many that attach to his own tribe—his people, his community of Oak Ridge, East Tennessee, and environs. Examples:

The people of this region are noble, intelligent, self sacrificing, hard working, loyal, and spirited; they have long formed an endearing community among themselves and have made incredibly important contributions to the entire world.

East Tennesseans have a tremendous sense of humor and have produced some of the most colorful, enjoyable, interesting people you'll ever be lucky enough to meet.

East Tennessee has generated some of the most important leaders of the world, and it continues to produce them, and to attract them to this area.

If you're from East Tennessee, or were "attracted here," you may at this point be nodding enthusiastic agreement. And indeed, one of Smith's major goals is to reinforce among Y-12 employees and denizens of this region this sense of cultural heritage and of self. But he also wants to develop such convictions, such recognitions and appreciations—both the general and specific ones—in the minds and hearts of much larger audiences. To do this, he relies to a great extent upon stories, which rarely state the convictions overtly; they grow them organically.

This is not to say that propositions can't be directly stated, and then supported, to good effect. As official historian of Y-12, Smith also uses this approach. For example, in his documentary *Y-12 National Security Complex: 70 Years of Making the World Safer*, he makes that very assertion—"For 70 years, Y-12 has made the world safer." He speaks it, and it appears in print

on the screen. Smith then uses a strict chronology to support the assertion, beginning in 1942 with President Roosevelt's decision to create the Manhattan Project then progressing to 2012. The documentary moves through the years, providing facts about Y-12's activities and achievements. As promised on the title page, "This video shows our roles in making the world safer — working to end World War II, providing stable isotopes for research, providing unique precision manufacturing capabilities, and meeting nonproliferation and global security missions."

However, even though such chronologies contribute to the historian's effort to generate awareness, they don't carry as much story power as actual personalized stories. Only when we hear or read narratives that engage our interest in the human drama going on, and allow us to identify with or otherwise emotionally react to the characters in the drama, can we be said to have heard or read a Story—and to have begun experiencing its effects.

### Lester Fox Stories

Since I've prepped you with propositions, you'll quickly perceive what Smith is up to when he tells his Lester Fox stories.<sup>14</sup> But even though I have—perforce in an analytical article like this—let the cat out of the bag regarding the storyteller's rhetorical purposes, you'll still be affected at some level. You won't be able to help yourself; that's the nature of good rhetorical stories.

Before we look at some of Smith's stories about this endearing figure by the name of Lester Fox, I'll first present a quick preliminary story. In many of the presentations I've heard by Smith—at my university, at Y-12 (during his guided tours), in video documentaries and in other recordings—he precedes the Hendrix story with reference to what later happened as WWII approached, telling about the physicists working on nuclear fission, and then segues to Einstein's letter warning Roosevelt that the Germans were racing to make a nuclear bomb—something most people have heard about—and then to Roosevelt's launch of The Manhattan Project, the secret mission to develop a nuclear weapon before Germany or other enemies could do it. Smith then transitions to a brief but important story involving Kenneth McKellar, a senator from Tennessee:

<sup>14</sup> Lester Fox is a real person, not an allegorical animal like in Aesop's Fables.

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President Roosevelt knew he was going to have to put a great deal of money into the Manhattan Project while keeping everything secret. So he approached Tennessee Senator Kenneth McKellar, who was chairman of the Appropriations Committee and would be able to disguise the movement of the two billion dollars (about 16 billion in today's money) that would flow to the Manhattan Project. "Senator," said the president, "I need to put a great deal of money into a project for the war effort, but I need to keep secret how much money it is and where it's going. Can you help me with this?" Senator McKellar smiled and replied, "Yes, Mr. President, I believe I can help you with that. Just where in Tennessee are you going to put that *thang*?"<sup>15</sup>

It was of course a *thang* that would bring a great deal of economic benefit and (eventually) prestige to the Senator's state. Smith tells this brief story with particular relish, and no wonder. It's memorable, entertaining, and, most of all, effective in promoting several of his convictions about the savvy, loyalty, power, leadership, and good humor of Tennesseans. Do we know for a fact that Senator McKellar, when speaking to President Roosevelt, pronounced that last word "*thang*"? No we don't, but a Southern "country" accent adds a perfect rhetorical touch to the story, and it is legitimate. Fair game, then, for weaving this element into the story.

Smith then begins describing the removal of inhabitants from Bear Creek Valley, a story continuing to involve Senator McKellar. As listeners behold that drama unfolding in their mind's eye, Smith transitions to the prophetic eye of John Hendrix—who decades earlier had seen upheavals in the valley—before resuming his removal narrative. In video and personal presentations, Smith dwells for a while on the peaceful, close-knit community inhabiting that valley before the start of construction for Y-12—but he soon transitions to a cluster of stories about a local teenager named Lester Fox:

Lester is the patriarch of the Fox automobile dealerships in the area today, but in 1942 he was a sophomore in high school in Oliver Springs, a little town just north of what is now Oak Ridge. He was skipping school. He and his buddy were playing the pinball machine.

When they finished they were walking down Main Street of the little town when they passed the telephone office. The telephone operator leaned her head out the door and said, "Lester, go get the principal, he has an important call." Now, Lester is skipping school, but he does go and get the principal.

The principal went to the telephone office and took the phone call and returned to the school. When he got there, he called all the students into an assembly and said, "I just got a phone call from Senator McKellar. He wants me to tell you to go home and tell your parents they are going to have to find another place to live; the government is going to take your property for the war effort!"

Many of the families did not have automobiles. They did not have trucks to move their belongings. If they did have a car they might not have gas for it or tires; those things were rationed. But what they did have were young men in the military getting killed.<sup>16</sup>

According to Smith, who has interviewed Fox multiple times, this was the first notice anyone in the area had that they were going to have to move from their homes to make room for a government project. The written notices began to appear on doorways soon afterward.

Lester was not a scientist or prophet or famous politician. He was just a local boy in Tennessee when the Manhattan Project came to his neighborhood. But he is a "specific," a representative personality, someone we can enjoy and identify with, and Smith tells multiple stories about him. Here are a couple more:

Oak Ridge had the ninth largest bus system in the nation. Lester and his older brother, who had been in the military but had come back home wounded, saw an opportunity. They bought a

15 From Smith narrative during tour of Y-12 facilities, April 2013.

16 From Smith's oral storytelling to my technical editing class, February 2014. The narrative thrust at this point in the story is that the people required to evacuate their homes and land in Bear Creek Valley did so willingly and patriotically, glad to support the war effort. Again: there are counter-stories suggesting otherwise in some cases, but it is not conducive to Smith's rhetorical effort to account for them in this set of stories, nor is he deceptive in focusing on the majority of evacuees, who evidently were patriotic and motivated to help their nation's war effort—nor, again, is it within the scope of my article to deal with counter-stories.

hundred buses and started them a bus system. Lester says those buses broke down every day.

One day Lester was driving their wrecker through Clinton, a little town just east of Oak Ridge, with one of their buses on the wrecker. He saw another one of their buses broke down, so he pulled over right in front of the second bus and tied it on to the other bus with a log chain.

When he pulled out on the road, a policeman pulled him over and said, “Lester, you can’t do that! Leave one of those buses and come back and get it. And, besides, I want you to meet me in the courthouse Monday morning at 8:30.”

Lester worried all weekend about what was going to happen to him when he went to the courthouse on Monday morning. But he went.

When Lester got to the courthouse, the policeman was already there waiting on him. He said, “Lester, come with me.” He took Lester to the clerk’s office and said, “Give this boy a driver’s license.” Lester was 14 years old when he got his driver’s license!

—Lester said he had to go to Knoxville every day to get parts for those buses. He always went to the National Auto Parts Store. One day he could not find a parking place anywhere. He drove around the block and still could not find a parking place. So finally, in desperation, he just pulled the truck up on the sidewalk right at the front door.

When he came out there was a policeman writing him a parking ticket. Lester said, “No! No! No! You can’t do that! I am from Oak Ridge and we are trying to win the war. You can’t write me a ticket!” So, the policeman tore up the ticket.

The next time Lester needed parts, he didn’t even look for a place to park, he just pulled right up on that sidewalk in front of the door. That same policeman was there again writing parking tickets. Lester waved at him and the policeman waved back. Lester never parked anywhere else.<sup>17</sup>

If you live anywhere around here, you know Lester Fox as the most successful owner of car dealerships for many miles around. “Lucky Lester” has always done extremely well in business, always able to sniff the good deals (or smell the bad ones) and know the right moments to buy and sell.

By now, we are getting the spirit of the Lester Fox stories. We don’t have to be told, via a list of facts, that East Tennesseans are clever, hard working, entrepreneurial, adventurous, and enjoyable—or that they put all they had into the war effort. We feel it all, embodied in the story of the Fox.

### Stories Told Visually and Materially

So far, I’ve been analyzing just Smith’s oral and written storytelling, but he’s also skilled in visual rhetoric, particularly in the area of photography. He is an avid photographer and a dedicated promoter of the historic work of Ed Westcott, who was the official photographer of the Manhattan Project. Westcott took thousands of photos, covering every aspect of the Manhattan Project. Smith has created traveling exhibits of selections from this photo archive, and he has selected many of these for use in his own lectures, presentations, and documentaries, as well as providing the images to historical societies, government organizations, libraries, newspapers, scholars, journalists, and others.

In setting up the museum at Y-12’s New Hope Center, Smith has combined Westcott’s photos with many others, as well as with physical objects: Y-12-made moon boxes for bringing back lunar rocks; casings for atomic bombs; vintage scientific instruments, nuclear attack survival kits, badges and award pins, and so on. All this tells the story, mostly via visuals and physical materials, of the various phases of the Manhattan Project, and also of Y-12’s postwar developments and accomplishments: discoveries and production in radioactive isotopes for medical science, biology, and industry; nuclear reactor research and materials production for the U.S. nuclear navy; management and stockpiling of our nation’s uranium reserves; support of operations to secure vulnerable radioactive materials in other countries; design and machining of high-tech precision products; manufacture and assembly of parts for the U.S. nuclear arsenal.

And here, as we’ve seen with all his use of historical materials, we see the rhetorician at work in the historian’s

17 Smith originally heard these stories, in some form, from Fox himself; they do not appear in print; Smith says he has “captured and retold” the stories orally ever since.

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role. For example, in the New Hope museum, we see a sequence of posters showing year-by-year progress of WWII, starting in 1939 with a large photo of Hitler:



**Figure 1.** Photo of Hitler used in display at New Hope museum, Y-12.

There is no parallel photo of Hirohito or Tojo at the 1945 end of the posters; instead, the major 1945 photo is this one by Westcott:



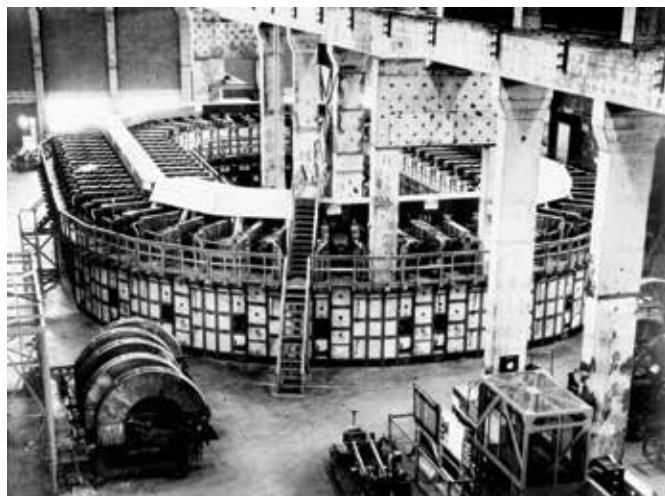
**Figure 2.** Y-12 workers rejoice that WWII has come to an end. [Ed Westcott photo.]

I asked Smith about his visual strategy. He replied,

The main idea in this poster sequence is to represent the nature of the evil we were fighting, and then the enormous scientific-industrial project we carried out, and the end result of our effort. The image

of Hitler on the 1939 poster represents to most people the darkest evil they've ever heard about, so we made that the prominent start point. Down the line, the 1941 poster shows an exploding battleship at Pearl Harbor, also a familiar image representing our deadly enemies. The emotional impact of both those photos better serves the impression we want to make than would photos of Emperor Hirohito or General Tojo, images much less familiar to most people. Then the 1945 poster shows not the atomic blasts at Hiroshima or Nagasaki, but the joy we felt that the war was over, and that we'd played such an important part in ending it. That's the essence of the story to war's end—and then of course the 1946 poster, "From Swords to Plowshares," shows workers at the same calutrons that produced the atomic material that went into Little Boy, but now it's illustrating Y-12's work on the Stable Isotopes Program, the work of separating radioactive isotopes for research and application in medicine, industry, agriculture, and biology.<sup>18</sup>

The other rhetorical technique Smith employs in the realm of things visual/material is *immersion*. That is, he takes his audiences physically into the massive Y-12 buildings housing a huge magnet (22 feet high) and other large-scale equipment used in processing the highly enriched uranium that went into Little Boy; he brings them up close against the big control panels so



**Figure 3.** Huge Calutron "racetrack" at Y-12 in Building 9201-1. [Ed Westcott photo.]

18 Notes from conversation with Smith, April 2014.



diligently controlled by the “calutron girls”<sup>19</sup> described in his books, articles, lectures, and presentations.

Smith also takes some visitors to vantage points overlooking Bear Creek Valley, like Chestnut Ridge, where they can see the length and breadth of the valley, now filled with the 500 buildings of Y-12 National Security Complex.



**Figure 4. Aerial view of Y-12 from Chestnut Ridge side**

This evokes a disclaimer: It is not true that Smith never plainly states his rhetorical goals when telling stories. It's rare, but he can also use this approach effectively. For example, he once told me:

When bids were being let for the construction of the Jack Case Center and the New Hope Center, I was asked to give an overview tour of Y-12 for each of the four bidders. I would take each of them up on Chestnut Ridge and look over the valley below. I would wave my arm and say, “During the Manhattan Project they built much of what you see in Bear Creek Valley in less than 18 months. Surely you can build us two little ole buildings in 18 months!” Every one of the bids came in with an 18-month construction duration. The buildings were completed in 16 months!<sup>20</sup>

This rhetorical appeal came at the culmination of the immersion tour, when Smith had his audiences in

the right frame of mind. But notice that the appeal comes embedded in a story, the story he had been developing in their minds throughout the tour. He could now access it in brief form when speaking to his audience. It referenced, of course, the creation of the most extensive and important industrial project in the history of humankind up to that point—and which had been accomplished in a mere 18 months. This is a particularly tight example of the process of “rhetorical appeal, audience conviction, desired action.”

Certainly all the contractors had come to Y-12 already motivated to try and be chosen for the job. But to be convinced to put forward bids corresponding to the extremely demanding timeframe desired by Y-12, and to accept that demand as right and reasonable, and then to remain so inspired about it that they actually built the massive Jack Case Center and the showcase New Hope Center in *fewer* than 18 months—that required an expert art of persuasion. The Y-12 bosses know their rhetor.

### Calutron Girl Stories

If you don't live around Oak Ridge but you have heard of the “calutron girls” who worked at Y-12 during the war years, chances are you learned of them by reading or hearing about the book *Girls of the Atomic City* by Denise Kiernan, a journalist. But long before Kiernan wrote her book, Smith was interviewing surviving calutron “girls” and telling their stories, both orally and in print.<sup>21</sup>

During his tours and other presentations, and in video recordings and in print, Smith tells the story of these young women.<sup>22</sup> During his immersion tours, bringing his listeners up close to the massive control panels of the old calutrons, he does explain some of the science behind the operation of this technical process. But there's only so much he can do during a tour, so he transitions pretty quickly to the Girls, using a segue something like this:

Gladys Owens, one of the Calutron Girls, spoke with me and some other historians, and we asked

19 Calutron is a portmanteau word, derived from California University Cyclotron, a device used for electromagnetic separation of isotopes, such as separating uranium-235 from uranium-238.

20 Conversation with Smith, April 2013.

21 Kiernan's impressive book, selling briskly and translated into multiple languages, has brought her fame. While researching for the book, she had relied a good deal upon Smith for archival material, photos, introduction to calutron women and to the inner circles of Oak Ridge, etc. Smith is delighted about Kiernan's success and has promoted her in many ways. He commented to me one day, “There's no end to the good you can do if you don't care who gets the credit.”

22 See <http://smithdray1.net/angeltowns/or/go.htm>, <http://www.y12.doe.gov/about/history/oral-histories/ray-smith>, and other sites.

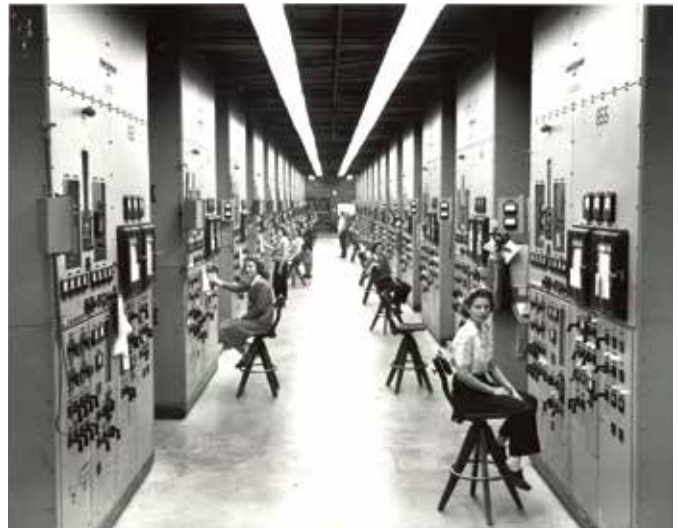


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her how much she knew, when she was a young woman working at Y-12, about the nature of the work she was doing. She said she knew nothing about it, only that her trainers had told her, “*We cannot tell you what you are going to do, but we can tell you how to do it and we can only tell you that if our enemies achieve what we are attempting before we do, God help us!*” Later, during a tour, when she and I walked up to a calutron control panel, she said, “Ray, I always wondered how this worked; can you explain it to me?” I said, “Sure Gladys; while you watched these meters and turned these knobs right here, you were controlling a rhetostat to regulate a magnetic field.” She stopped me and said, “Ok Ray, I still don’t understand what I was doing, but I do know that if I forgot to remove the bobby pins from my hair before I came to work here, they would fly out and stick like glue to the panel!”

Smith then moves on to the story he tells most often about the calutron girls; he calls it “The Calutron Contest”:

[The cubicle operators] sat on a stool 8 hours a day and adjusted the knobs on rheostats to keep the particular meter that they were watching reading at where it needed to be. Tennessee Eastman hired young girls right out of high school. Many of them were just 18 years old when they were working here, and they hired them to run these calutrons, very sophisticated equipment at that time. Now we were in a race with Germany to get the uranium as quickly as we could for the first bomb. So the people who had designed the calutrons felt like that there might be more production made if they had engineers and scientists running these calutrons instead of these young girls that Tennessee Eastman was hiring. So Tennessee Eastman agreed that they would have a contest to see who could be the most productive. So for one week, they put the young girls on one side of the calutron control cubicles and the engineers on the other side. They let them run for a week and you know what happened at the end of that week. The young girls had more production than the scientists and the engineers because those young girls would just adjust those knobs when they were supposed to when they got out of the control range. The engineers and scientists on the other



**Figure 5. Calutron girls at controls, 1944. Gladys Owens is at right, closest to camera. [Ed Westcott photo.]**

hand were adjusting them all the time trying to keep them at peak, so they were dickering with it all the time, where the young girls were just doing what they were supposed to do, and they actually were practicing statistical process control without ever knowing those words or that concept, but the young girls beat the scientists hands down and Tennessee Eastman continued to hire these young girls right out of high school to operate the calutrons. There were actually 22,000 people working here at Y-12 for a year on 1,152 calutrons in order to get the uranium that was needed for the first bomb.<sup>23</sup>

Stories like these lend themselves to many kinds of analysis. For example, they can be seen as examples of *phronesis*—wisdom in practical matters—competing successfully with the specialized *sophia* of scientists and engineers. And this, in fact, is one of Smith’s favorite story threads, as it provides both sense making and positive material for “identity maintenance” among an everyday populace that was obliged to receive an emergency influx of the most sophisticated science on planet earth. This rhetorical move is part of Smith’s art of personalizing history, especially by way of supplying snapshots of the interface between people and technology. All such stories promote one of his most pervasive arguments—namely, that although the science

23 Transcript from Smith oral storytelling, online at <http://www.y12.doe.gov/about/history/oral-histories/ray-smith>.

and technology at Y-12 and throughout the Manhattan Project were vital and tremendously impressive, the main reason everything came together in time and worked, the biggest factor in winning the atom race and the war—was people, especially the good wholesome people from around Tennessee. This is the rhetorical thrust: that our country's most important resource was, and must continue to be, everyday Americans like Gladys, willing to work with dedication, cooperation, and trust.

### Jack Case Stories

In addition to the theme about the virtue and rewards of trustworthy, dedicated labor, another core value of Y-12 National Security Complex is the “Can-Do” mindset. Both themes of course embrace values and capabilities that any corporation or organization desires to project to the public, to potential customers, to managers, and to employees in general. Smith's primary *modus operandi* for doing this, as we are seeing, is rhetorical storytelling.

Although his stories are spread to wide audiences, he has created—and gathered—many of them for a primary audience of Y-12 employees. He is, after all, the official historian of Y-12, and one of his duties is to describe and inculcate the Y-12 culture to his fellow employees. Many of his stories with this rhetorical purpose bridge to the post-war years, when Y-12's primary mission, and accomplishment, had become “production of nuclear weapons secondaries to result in the fall of the Berlin Wall and the defeat of Communism in the Soviet Union.”<sup>24</sup>

Here are brief samples of Jack Case stories as told by Smith (transcripts from oral storytelling):

The way Jack came to be selected to go to Oak Ridge was a bit unusual. In 1943, both Jack and his brother-in-law, Ben Karnosky, joined the Illinois National Guard. In April 1944, they both were being drafted into the regular Army at St. Louis, Missouri. As they were going through the induction process, one of the officers processing the paperwork said to Jack, “You are going to Oak Ridge, Tennessee. You can either go as a civilian or as military, but you are sure going! They want you because you are a ‘toolmaker.’” Jack did not necessarily know what

to think. As far as he knew there was no such place as “Oak Ridge, Tennessee.” His brother-in-law was going to fight in the war and here he was getting sent to somewhere in Tennessee that he had never heard tell of, doing what—he had no idea—and what he really wanted was to help win the war. Little did he know just how much he would contribute to actually winning the war in just over a year and a half!

. . . So he came here in a very early part of the Manhattan Project because of his tool and die making experience. He was immediately put to work in the machine shops and before long was helping to solve many problems that were developing here in the Y-12 plant. . . . He also continued [after the war] to be able to help with key issues coming into the plant and problems that needed to be resolved, was instrumental in bringing the machining capability for uranium back to Y-12. But beyond that Jack was in charge as a plant manager for 15 years. Those years were a time of a great buildup in the capacity at Y-12 for producing nuclear weapons. Many of the machine tools, much of the computerized machining that has been developed here at Y-12 was developed during his time as plant manager. He was able to see the need in the future that would be required of Y-12 to produce a large number of weapons components. He encouraged the purchase of multiple machine tools and helped to equip the plant to be ready for the demands placed on it in the '80s after he was retired but continued to use equipment that had been procured during the time of his leadership.

During the 1980s over 8,000 people worked in the Y-12 plant, producing a large number of nuclear weapons. The Cold War being what it was at that time, the Soviet Union was trying to keep up with the number of weapons that were being produced at Y-12, [but] could not do so and [this] ultimately broke their economic back and played a large part in ending the Cold War. . . .

One of the characteristics that Jack Case helped to build into the culture of Y-12 is something that we call a can-do attitude. It was known throughout the weapons complex during Jack's leadership at Y-12 that Y-12 could do anything that needed to

<sup>24</sup> <http://smithdray1.net/jackcase/coldwar.htm>

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be done. When there would be a problem or a need or something in the weapons complex that needed to be manufactured, Jack Case would say, “Yes, we can do that at Y-12.” Then he would come back to Y-12 and tell these managers and workers here at the plant what he had committed to do, and they would begin to figure out how to [get] that done.

That was done so much and became so commonplace, that the weapon design laboratories would kid Jack when he would be in a meeting, and on one occasion they told him, “You can make anything at Y-12. I bet if we asked you to, you could build a brass outhouse for us.” And in fact at the next meeting that he had with those laboratory managers, he brought them a model of a brass outhouse. . . .

A number of Y-12 employees are scientists and high-level managers and government officials, but the majority are the machine workers, technicians, electricians, engineers, building maintenance workers, etc., who do the everyday work at Y-12—much of which has to do with inspecting, maintaining, and making parts for the U.S. nuclear arsenal. When Smith tells them (or writes to them) Jack Case stories, he is creating and maintaining corporate culture as well as forming and maintaining community memory, thus helping people—especially employees—understand and consent to what is valued in the organization, what is honored, what is rewarded, what are the norms of the organization and the character of its leaders and members. (And as we saw at the end of that last Case story segment, warmth and good humor are part of the culture. Smith tells many more Case stories that invite the listener to enjoy the human side of this impressive leader.)

Many of Smith’s stories can be understood as culture-forming rhetorical efforts, but the Jack Case stories are among the most pointed in this regard. As you perceived, through them, Smith honors a particular kind of valued character and performance. These stories have, as well, the virtue of suggesting to Y-12 employees that they, too, can follow a path something like Case’s—a man who started as a machinist and then moved up the corporate ladder, and whose skill as a machinist continued to serve him well even at the highest levels of his career.

### The Manhattan Project National Historical Park

Recently,<sup>25</sup> Smith was a guest at a ceremony in Washington, DC, where the Department of the Interior and the Department of Energy signed the official papers creating a new park, unit #409 of the National Park Service. I went to Oak Ridge to hear Smith once again tell his stories as he toured visitors through both Y-12 and Oak Ridge National Laboratory, immersing them in the massive buildings and scientific machinery used during the Manhattan Project. This was a special tour, though. For the first time in history, a uniformed tour guide from the National Park Service was along. She was listening carefully to Smith’s narratives, because in a short time, she and her colleagues would be joining him in the work of storytelling about those places.

The Manhattan Project National Historical Park embraces the three major sites of the Manhattan Project: Oak Ridge, Tennessee; Hanford, Washington; and Los Alamos, New Mexico. Smith and other historians and officials, and residents at Oak Ridge and the other sites, had for more than a decade been working to establish the park, and that work was extensive—again, beyond the scope this article to detail. But I asked Smith for a transcript of his testimony before Congress in 2013, when he’d gone to DC to promote the formation of the park. It is a fairly long testimony, over 3,000 words, much of it in chronology form. Smith told me, “I don’t know that Congress will remember a great deal of what I said—but they may remember the stories I told them.” Even in the formal setting of a Congressional testimony, Smith employed his storytelling powers—because he knew they were his most effective rhetorical tool.

The Manhattan Project National Historical Park is now a reality. Its presence in Oak Ridge goes beyond the secure Y-12 complex into ORNL (graphite reactor) and into Oak Ridge to A.K. Bissell Park, site of the International Friendship Bell<sup>26</sup>—and to other locations.

<sup>25</sup> 11/11/15

<sup>26</sup> *The bell was a joint effort of Oak Ridge and of several Japanese, including the sister city of Naka, to commemorate the 50th anniversary of the birth of Oak Ridge. The key Japanese promoter of the project was Oak Ridge resident Shigeo Uppuluri, with whom Smith developed a strong friendship.*





**Figure 6. International Friendship Bell pavilion, which stood for 20 years in A.K. Bissell Park, Oak Ridge, Tennessee. [Ray Smith photo.]**



**Figure 7. International Friendship Bell after removal from original pavilion—a bigger pavilion is being planned. [Ray Smith photo.]**

Smith says he loves his work and may continue as historian and tour guide at Y-12 for many years to come. But someday he must pass the torch to other guides. His rhetorical storytelling has been instrumental in putting those new guides into place. The National Park Service will now join him in narrating the history and significance of the Manhattan Project.

### Respect for Competing Narratives

At the same time our storyteller advances his rhetorical agenda, he does not shy away from the dark side of nuclear history. The most recent example of this I've seen is the appearance, in his "Historically Speaking" newspaper column, of two pieces by a fellow historian about experimentation in Oak Ridge—70 years ago—to study human metabolic reactions to plutonium injections. Smith introduces the first piece with these words:

This is part one of a two-part series of "Historically Speaking" that will touch on sensitive and uncomfortable aspects of the past. The series will describe the first experimental injection of a human with plutonium. I know that sounds horrible... but it happened, right here... in Oak Ridge! ("Oak Ridge's Secret Plutonium Experiment, Part I," *Historically Speaking*, 2016)

Smith is cordial and communicative with competing narrators. For example, he is tremendously gracious to a competing narrator such as Freeman.<sup>27</sup> Local peace activists, like Smith's friend Edward Lollis, have great respect for Smith. Lollis is one of the world's foremost advocates of, and authorities on, peace monuments and peace museums. One day, I met Lollis and Smith out at the Friendship Bell pavilion, and it was heartening to see such deference and respect between two people who advance very distinct narratives regarding our nation's use of nuclear weapons, and the need for Y-12 to continue its work for the U.S. military, and other such issues.

An equally remarkable friendship exists between Smith and Emily Mitchell, a young woman from Oak Ridge who became convinced that it had been wrong for the United States (as, she believes, it would be wrong for anyone) to use nuclear weapons. In 2007–2008, Mitchell had visited Hiroshima on a quest for further

<sup>27</sup> See his review of her book: <http://www.oakridger.com/article/20151016/NEWS/151019920/?Start=1>

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understanding about what her home town had done. The narratives (journal entries) she sent home “from the other side” were engaging accounts of the experiences and thoughts that deepened her convictions. Smith published all her entries in his newspaper column, praising the intelligence, sincerity, compassion, initiative, and engagement of this young woman—whose beliefs about her country’s former use and current possession of nuclear weapons is diametrically opposed to his own. But her qualities, he opined, are what we all need in our quest to make sense of history and to evaluate it. Ms. Mitchell’s journal entries thus appeared in Smith’s *2008 Historically Speaking — International Friendship Bell* volume, as “Emily Mitchell’s Journey of Discovery.” Mitchell herself wrote the foreword to that volume. An excerpt:

Ray surprised me. Not only was he open to my own journey, my own search for meaning and truth in the past, but he encouraged me to discover that truth on my own. “You and I may well have formed our outlook on the whole issue of the atomic bomb years ago,” Ray wrote to his readers in one of his columns.

But he never forced that opinion on me. He was open about his own feelings in relation to the bomb, but never tried to convert me to his way of thinking about it. In fact, he encouraged me to do my own digging, to arrive at my own conclusions, in my own way.

In his column, Ray defended my emotional journey. He stood by and allowed me to experience and share emotions without trying to convert me to any particular way of thinking. He never impressed his opinion, but instead waited for me to make my own discoveries. He opened up avenues for discussion with his readers, to learn from their experiences and reflections, too.

This method of encouragement, of passive teaching, was much more valuable than any lecture. (*2008 Historically Speaking*, p. 3)

A nice report from one of Smith’s valued competing narrators. She may not be correct that Smith was making no conversion effort, even though nothing he did felt to her like such an effort. But I completely agree with her implication that there is something unusually

patient, collegial, and effective about the way good storytellers do their research, learning—and teaching.

### Conclusion: Story of the Story Maker

This article is more than a collection of stories or an exposition and analysis about the rhetorical power of stories. It is both those things interwoven with the story of a skilled story maker. Smith’s work is complex; he’s an historian, both official and independent, as well as a public relations expert, tour guide, and a public activist. He is also a technical communicator in the broad sense of that designation, with impressive skills applicable to our own labors.

What applications am I referring to? Well, to most kinds of technical/professional communication. Certainly, there are contexts and genres where we wouldn’t try to apply the kinds of narrative techniques we’ve been considering in this article—things like lab or medical procedures, industry specifications of various kinds, most forms of emergency communications, very technical or brief communications, and so on. But that still leaves open a huge arena of communication.

Technical communicators are among the most prolific communicators in the world. We ask for a great deal of the world’s attention. We write, edit, and design everything from major reports, manuals, articles, trade books, proposals, and Web content—down to (usually) smaller items like letters and memos. We create training videos, online help, and an array of other multimedia communications. We command an armamentarium of rhetorical powers to support our professional work with industry, science, technology, government, business, and education. Unfortunately, we underuse one of the most powerful devices available: storytelling. Yet, ever since high school English or drama class, we’ve all known the basic formula of a story: There’s a setting, in which people exist, and those people are either beset by a problem or develop a desire. So they go forth to solve the problem or obtain their desire. How they go about it, as well as what the problem/challenge-makers do, constitutes the plot. The plot goes on to reach some kind of resolution. As a result, there’s something that readers/audiences come to feel, “know,” or believe at some level—perhaps at a deep level that influences their worldview, decisions, and actions.

A story is the most simple, lived, familiar pattern in the world, always available in our human



communications and interactions. In the world of work, our stories can't run to novel length, but they don't have to. Our rhetorical efforts are energized even by story snippets or selected narrative techniques.

What techniques exactly? Sorry, I'm not transitioning into *Ten Easy Steps for Writing Stories*. What I've offered is this case-based, story-laden, story-scripted article you've been reading—something designed to engage and expand your narrative knowing and narrative power, through the very display of and reflection upon Smith's art of rhetorical storytelling that I hope you've been enjoying.

However, I will add one explicit bit of advice for effective story making: Show people the spirit of your characters. This goes for all characters, but just now I'm referencing your protagonists. These might appear in a proposal to a government agency from whom you and your colleagues (yes, the heroes) are seeking support for their quest to bring electrical power to nations in darkness,<sup>28</sup> or they might appear in an environmental report about your company's determined efforts to clean contaminants from streams. Reveal, in your proposal or report, the spirit of these characters: their minds and hearts, their actions and reactions to things, their history, their beliefs and motivations. Sound dangerous? Be bold. You'll open the door to sympathy, to identification, and to the knowing received from narrative. You can do this on large scales and small; as I said, it doesn't require a novel.

28 As part of a professional development team, I recently taught narrative techniques to a group of engineers and scientists of the Ghana Atomic Energy Commission (GAEC) in Accra, Ghana. I was in charge of the unit on proposal writing. I saw immediate improvement when participants began thinking of using storytelling within their proposals. For example, one young nuclear scientist was working on a proposal that sought exactly what I'm describing here. The improvement was amazing: dry chronological reportage in his "History of the Problem" introduction transformed into an engaging, theme-based story—"A Struggle Out of Darkness Into Light"—telling of his experience at the GAEC (setting), where he and his dedicated colleagues (heroes) struggle to advance nuclear science and security despite minimal resources and an inconsistent electrical supply (problem/challenge). He included scenes showing the spirit of his colleagues: their dedication and intelligence, and also their frustration under disrupted work conditions. Later sections of the proposal detailed plans (the plot) to conquer the problem, strengthened by the allies and financial support being sought via the proposal. His desired short-term "resolution" is a particular kind of support for the Commission's current work, but the greater Resolution in this scientist's narrative is creation of electricity-producing nuclear power plants that will satisfy Ghana's need for more electrical power. "We are weary of this darkness and eager to make our vision bright again," he writes. Inspiring! [With permission of Paul Amoah, Research Scientist, GAEC Radiation Protection Institute.]

In writing this article, I've been taking my own advice, showing you the spirit of Ray Smith as I pursue my rhetorical purpose. I want to advance that purpose as effectively as I can, and fortunately I'm being given plenty of page space for it, so here is more Smith—and, inescapably, more me.

On many of his tours, Smith tells the following story about himself:

When Y-12 experienced a change of management back in 2000, hundreds of Y-12 workers lost their jobs; I was among them. But I attended the transition meetings and learned the new managers wanted a due diligence study of the then 800 Y-12 buildings and a list of buildings that could be torn down without adversely affecting missions. I knew all the buildings. I said to the managers, "I can help with the due diligence study and provide you a demolition list." They agreed, so I did the study and they began to use the list. Y-12 is still using that list today.

As they worked and were tearing down a number of the buildings, or reworking the interiors, I said to management: "You are losing a lot of history as you tear down those buildings." By now they had me figured out, and they said, "Okay, Ray, what do you want to do about that?" I answered, "I'll be your historian until I retire."

"The only problem with that agreement is," he says on the tours, giving listeners a wink, "I won't retire!"

From Smith's self narration, shared on so many tours and presentations, we learn that he was a building maintenance supervisor at Y-12, so we're not surprised he studied the buildings in his charge; it was his job. What is surprising is the degree to which he began to learn about the history of each building. This was the beginning of his historical course of studies, but there was also a catalyzing event that set him deliberately upon the path to becoming a professional historian. Here follows the story, as I drew it out of him during my first lunch with him in Oak Ridge.

During the Vietnam War, Smith had been a U.S. Air Force Staff Sergeant specializing in electronics. It was this specialty that opened up for him the job as an electronic technician, soon promoted to maintenance

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supervisor, at Y-12. When he landed that job, he set about getting to know all his buildings, as I've said. In order to learn what they needed and how to keep them working, productive, and safe, he found he needed to know a lot about what had gone on in each building over the decades since the place began to be built, in 1943—and through the years as more buildings and features appeared. He didn't know it at the time, but he was becoming a student of history, of a massive confluence of people, science, technology, and events that had changed not only this part of the country but the entire world, forever. Yet, the weight of all that, and his sense of the importance of it, were growing daily. He meditated on these things both at work and after, when he plunged himself into a deep pool of community service in church, charities, counseling, Boy Scouts, and many other contexts.

Then one day, Smith's friend John Rice Irwin, a local historian and museum operator, asked Smith—his friend so skilled at photography—to take a good photo of a particular statue. This was a statue in The Arnwine Cemetery of Grainger County of upper East Tennessee, depicting Nancy Ward, a “Beloved Woman” of the Cherokee Indians. She had been a warrior, a technical expert, a spiritual leader, a diplomat, a lover of her family and tribe, and a peacemaker. As Smith took his photos, he felt a sense of awe, and he wondered, “Who was this woman who had been called Beloved by her people? How had she become so significant in history that this statue of her had been created years after her death? And why was it on a white woman's grave?” The impression was so deep that he marks that day as the moment he decided he wanted seriously to study history—to hear and share the stories that made up the fabric of the people and land around him.

After sharing this personal story about his visit to the Nancy Ward statue and its effect on him, Smith transitioned to telling me about Ward herself:

This was a Cherokee woman; all accounts say she had a queenly and commanding appearance, and even in her youth was resourceful and intelligent. Her Cherokee name was *Nanye-hi*, which means “one who goes about”—that is, one who goes about doing important things, guided by the Great Spirit. This name derived from the name of the Spirit People of Cherokee mythology. When she was 17, *Nanye-hi* fought alongside her husband

Kingfisher in their raid on Creek enemies. She chewed on the lead bullets for his rifle, to make the bullets more deadly, and she loaded his rifle for him. Kingfisher was killed in the battle, but *Nanye-hi* grabbed his rifle and sprang up from behind a log, rallying the Cherokees to fight harder. She led a charge that unnerved the Creeks, leading her people to victory.

Because of her valor, the clans chose her as Beloved Woman; this gave her a great deal of power in



**Figure 8. Nancy Ward statue in Arnwine Cemetery of Grainger County of upper East Tennessee. The disc reads “Watauga 1776” in the center to commemorate Nancy’s act of warning the Watauga settlement that year of an impending Indian attack, thus saving the settlers. She holds what appears to be a calf, symbolic of her introduction of dairying to the Cherokee people. [Ray Smith photo.]**

tribal government. For example, she was given complete control over prisoners. She saved Lydia Bean from being burned at the stake (then kept her as a house guest for a while, learning from her the art of dairying). *Nanye-hi* was made head of the Women's Council and sat in the Council of Chiefs.

She later married Bryant Ward, an English trader; whites thereafter knew her as Nancy Ward. She became an increasingly revered figure, always working for peace between her people and the whites, always learning useful crafts from them and sharing that knowledge with her tribe. She was known for making treaty negotiations, and on at least two occasions she warned John Sevier of impending Indian attacks, thus saving many lives. She was a powerful speaker in meetings—both in meetings among her people and in negotiations with whites, pleading for continued peace and a “chain of friendship that will never more be broken.” The Cherokee people believed that the Great Spirit often spoke through a Beloved Woman. Nancy Ward was the last such designated by the Cherokees, and she was a great force for good and peace in her place and time.<sup>29</sup>

As I've continued to get to know Ray Smith, and his life and doings, and to study his storymaking art, I've woven a sense-making story about him. In my story about Smith, the history of Nancy Ward feeds vibrant threads into the loom. So much so that I say to myself, “I think I know why the Nancy Ward statue, and her story, had such a profound effect on Ray, setting him upon the path to becoming a *histor*, gathering and creating stories about the events and people of his own tribe.” I know I'm departing from “academic objectivity,” but the power of stories is upon me, and I see threads interweaving. I think Smith was taken with *Nanye-hi* because she is a kindred spirit from his region and, like him, became a warrior at need, fighting bravely and intelligently to protect her family and her people, learning crafts to sustain and prosper them. And yes, in the heat of battle, she chewed on bullets, to make them more devastating, which might seem to some people a

savage, terrible thing to do—just as does the making of a devastating bomb. But it was necessary to fight the Creeks, those deadly foes of her people. Yet Nancy's underlying motive was the desire for peace, for which she worked using all the talent, courage, diplomacy, and energy at her disposal. And she manifested great compassion to others, as she “went about” doing what she—and others—perceived as the Great Spirit's mission for her.

My comparison of Smith with Ward sounds honorific, not unbiased or objective. But as Blyler points out in “Narrative and Research in Professional Communication” (1996), postmodernists have shown us there's really no such thing as objectivity in something like an ethnographic or case study.<sup>30</sup> Like sociologists, historians, and all kinds of other researchers, I, too, am a storyteller, a weaver of realities through the discourse I create—and like everyone else, I'm inescapably biased. What's more, I have not been able to stay at any kind of “authoritative” distance from the subject of my case study, Mr. Ray Smith, whom I clearly admire. I have become, again inescapably, a co-narrator with him. No, in these matters we can't hope for objectivity—but we can hope for wisdom and morality, and we can employ narrative powers as we seek them and weave them into our character and *ethos*. And we can unabashedly use the power of narrative in our professional lives as technical communicators or whatever we are, because those lives are full of communications with other story-seeking, story-creating beings.

I have met many men and women in Tennessee who are respected. But I've met none more beloved by his people than Ray Smith, as he goes about his storytelling mission. He is a *histor*, a wise rhetorical

storyteller. Do we aspire to employ such narrative powers in support of our own organizations, missions, jobs, communities, causes? If so, we can learn a great deal about this art by listening to storytellers like Ray.



**Ray Smith, the historian of Y-12 National Security Complex**

29 Notes from conversation with Ray Smith, April 2013. For more on story of *Nanye-hi*, see “Ward, Nancy” entry (pp. 1033–1034) by Smith in *The Tennessee Encyclopedia of History & Culture*.

30 “. . . postmodernist ethnographers claim that the ‘researcher’s voice’ and the ‘researcher’s story’ cannot be separated from the voices and stories of those who are being studied.” (Richardson, “Collective” 203-04, quoted in Blyler p. 336.)



## Stories from the Secret City

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# Toward a Critical Alignment with Efficiency Philosophies

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## Abstract

**Purpose:** Research has indicated technical and professional communicators (TPCs) continue to struggle with establishing value in the workplace. Studies advocate for more effective communication with management, but scholarship has yet to adequately address the relationship between establishing and explaining value and management philosophy. This article takes up the two issues of workplace value and “speaking the language of business” as they relate to management efficiency philosophy, specifically Lean and Six Sigma. I argue that management philosophy, particularly efficiency philosophies, is an integral, yet often overlooked, aspect of organizational context that affects both organizational structures and cultures.

**Method:** I share the results of an ethnographic study of a series of trainings that were part of a Lean initiative. I buttress these observations with two documents, one internal and one customer-facing, from Lean Six Sigma initiatives.

**Results:** The trainings illustrate the work of creating an organizational culture and the importance of communication in developing a sustainable Lean culture. The two documents are examples of how processes and workflow (e.g., organizational structures) are written in efficiency environments.

**Conclusion:** Practitioners and researchers should see efficiency management philosophies as important components of organizational contexts not to be glossed over. Communication is acknowledged as important to maintaining culture, but TPC knowledge and expertise are not necessarily recognized. The two documents show opportunities in these kinds of cultures to make work visible and establish value.

**Keywords:** technical communication value, lean, efficiency, management practices, organizational culture

## Practitioner's Takeaway:

- TPC work is incredibly valuable in efficiency environments but not always visible. My observations of Lean trainings give practitioners a sense of the role and importance of communication in developing a sustainable Lean culture.
- I suggest using structural documentation, like the documents discussed here, to strategically and effectively make TPC work both visible and valuable to efficiency cultures.



## Toward a Critical Alignment

### Introduction

Phrases such as “continuous improvement,” “lean,” “data-driven,” “value-added,” and “measurable outcomes” have become so commonplace that we don’t often think about the efficiency management philosophies that constitute and inform these concepts and practices. In their study of evolving workplaces, Edwards and Wajman (2005) observe: “While employees are encouraged to be self-reliant, innovative, and make their own career choices, at the same time they are expected to be good team players, to conform to company norms, and to be subjected to ever tighter financial and operational accountability” (p. 70). In an age of austerity, many companies, and even universities, continue to turn to efficiency philosophies and Edwards and Wajman’s list of management expectations for employees remains relevant.

Efficiency management philosophies are of particular interest to Technical and Professional Communication (TPC) for the reasons Wajman and Edwards note above—these philosophies have shaped workplaces, influencing cultures and practices from workflow, to defining work value, to project management. Thus, effective communication, including explaining the value of TPC work, depends upon tying arguments to underlying management philosophies. I use efficiency management philosophies as an umbrella term to include philosophies, methods, models, and frameworks focused managing people, resources, and projects in terms of quality and/or speed. In this article, I argue that efficiency management philosophies are an important contextual factor to workplace studies and TPC work and that we need to acknowledge and foreground these philosophies in our discussions of the role and value of TPC.

Today’s efficiency management philosophies (e.g., Lean and Six Sigma) stem from earlier efficiency movements such as Taylorism and Fordism and, therefore, still have many connections to readily visible and easily measured production and manufacturing work. A training facilitator, with a background in the auto industry, described Lean as “factory floor thinking in an office setting” (May 29) as part of a Lean initiative at a university. This focus on visible work and products does not always translate neatly to knowledge work, like TPC. But while the focus on visible work may be problematic for knowledge work, these philosophies also purport to empower workers by providing tools for problem solving and

defining work processes and workflow. If these tools do indeed empower workers, then TPC practitioners and researchers need to make more explicit connections when approaching issues of practitioner value, visibility, and role. For example, work processes are necessarily interconnected and interdependent, creating the need for communication processes to facilitate the flow of information to necessary stakeholders. As I discuss below, my observations of the Lean initiative suggest that communication is recognized as important to Lean, but that the knowledge and skills involved in communication practices are not necessarily understood.

Practitioner value, visibility, and role are all intimately tied to workplace culture and efficiency management philosophies can define culture. TPC scholars have noted issues with explaining value in relation to management (e.g., see Brady & Schreiber, 2013; Dubinsky, 2015), but scholarship has not yet adequately addressed the relationship between establishing and explaining value and management philosophy. TPC scholars have also argued that value and visibility can be achieved by speaking the language of business (e.g., see Sullivan et al., 2003). Students are encouraged to examine mission statements and other corporate branding documentation to get a sense of corporate culture. In “Moving from the Periphery,” Sullivan et al. (2003) argue that a technical communicator ought to work to become a “full member” of an organization, which requires “investing” in organizational culture (pp. 124–125): “By imagining oneself in the context of the organization and contributing to its goals, one begins to identify with the organization and discover ways of taking initiative appropriately” (Sullivan et al., 2003, p. 128). For Sullivan et al., becoming part of the organizational culture is not about simply fitting in. Rather, one must be immersed in corporate culture in order to successfully initiate change. While developing one’s *ethos* and being able to effectively read social practices are important, these qualities must be informed beyond the surface social situations, company mission and goals, etc. For example, if the workflow at a company requires TPC work to be initiated by engineers or other subject matter experts (SME), it will be more effective to make an argument from within the culture that TPCs also need to be able to initiate their own projects. From within the culture, it would be easier to make the change a permanent part of the workflow rather than a one-time fix.

What are missing from previous discussions of value and workplace culture are the philosophies constituting workplace culture. In a study of Lean trainings, I show what goes into creating a Lean culture at one institution. I buttress this study with an analysis of two Lean Six Sigma documents—one internal and one customer-facing—to show potential opportunity for TPCs to define their value within the system and potential to be defined by the system. By bringing the products of workplace culture into conversation with the development of workplace culture, I illustrate that opportunities for defining work and establishing value are present. But these opportunities need to be acted upon.

Understanding efficiency philosophy is crucial to understanding how TPC work is organized and defined in such environments. We need to recognize the contextual importance of these philosophies as they affect both workplace cultures and structures—this is one way to “speak the language of business.” In the following sections, I argue that understanding efficiency management philosophies is crucial to speaking the language of business and understanding (and becoming a member of) organizational culture, as well as opportunities to foreground value in that culture.

### Value and the Language of Business

Much has been said about the role and value of technical and professional communicators (TPC) in the workplace. In 1996, Johnson-Eilola, in his often cited “Relocating the Value of Work,” called for rearticulating TPCs as the symbolic-analytic workers needed in the information economy, arguing that as system thinkers rather than static skill workers, TPCs would be more valued in the workplace. In the same year, Saul Carliner (1996) asked and offered a possible answer to how technical communicators can feel strategic to an organization. He contended “. . . many of us do not think about aligning our priorities with the needs of business or conveying those needs in business terms. Our occupational culture currently does not value it” (Carliner, 1996, p. 271). In order to be valued, in other words, TPCs need to be willing to tie their knowledge and skills to the terminology and concepts used by the organization, including underlying efficiency philosophies.

As organizational structures shift, research has focused on TPC roles and value in team and project-based environments (e.g., see Redish, 2010; Amidon

& Blythe, 2008). Hart and Conklin’s (2006) study of experienced technical communicators indicates that technical communicators are becoming increasingly important parts of teams and serve important roles in developing processes and facilitating relationships. Organizational shifts have required TPCs to change as well. Hart and Conklin (2006) note that TPCs are carving out new roles: “Technical communicators are becoming strategic negotiators who bring disparate groups into conversations that are ultimately intended to benefit our user audiences” (p. 413). In other words, flattening organizations no longer have mid-level managers to help facilitate communication across functions, and some TPCs in this study have seen the need and successfully taken up the role.

While Hart and Conklin’s (2006) study shows that there are TPCs who have successfully transitioned with the changing workplace, where work is managed more by process than by individual managers, there is evidence that at least some technical communicators continue to have trouble establishing value in the workplace. Dubinsky (2015) observes: “The issue of visibility and value comes up over and over again, particularly during discussion about products and processes, which is one of the driving reasons for this research” (p. 119). Each researcher in a recent special issue of *Technical Communication* suggests that technical communicators in some way need to better understand business contexts, to speak the language of business or to demonstrate their abilities in ways relevant to the business context (See Baehr, 2015; Dubinsky, 2015; Kimball, 2015b).

Positioning TPCs to best apply their strong rhetorical and communication skills requires management to recognize the value of these skills, but the burden of understanding the value of TPC cannot be placed solely on management. System thinking, as called for by Johnson-Eilola, is required to examine and understand these contexts, but the concepts and terminology of management are also required in order to appropriately align with them. For example, Hart and Conklin (2006) describe technical communicators providing cross-functional communication processes where none existed. But the skill and expertise needed to develop these processes must be articulated effectively for management to both understand the value of that particular work and the value of technical communicators. Giammona (2004) argues the ability

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to communicate across domains is necessary both to be managers and to effectively work with management:

We need to be able to sit at the table with the heads of technology functions in our organizations as well as those on the business side, with those in manufacturing, marketing, sales, customer service, human resources, and with senior management, to pitch our services, make a business case for our functions and deliverables, and delineate eloquently the value we provide. (p. 361)

This ability to communicate and work effectively hinges on the ability to relate to the terminology used in those contexts, which, as Sullivan et al. (2003) point out, is closely tied to organizational culture. Technical communicators need to understand organizational culture in order to see their work from that perspective, and imperative to understanding organizational culture is understanding underlying philosophies. From the position of cultural insider, TPCs can begin to define the value of their work. While Hart and Conkin's (2006) study suggests technical communicators are finding new opportunities in flattening organizations, Dubinsky's (2015) work suggests there is still more work to be done in terms of establishing TPC value.

Articulating value, even when specifically serving organizational objectives, is not always an easy endeavor and can be an unfair burden. One example is when organizational categories and titles have not kept pace with organizational shifts and needs. In Brady and Schreiber's (2013) case study, the research participant, "Brenda," is classified as a technical writer, though her work centers on project management, unlike traditional technical writers at this particular company. Where Brenda is embedded directly in projects, others with her title are primarily tasked with formatting final documents. She uses her performance review to explain the difference between the two roles and also has to write a response to her boss' evaluation in order to drive the point home. While this is a solution, it is not sustainable for at least two reasons: 1) over the long run, it's likely to cause friction between Brenda and her boss, and 2) it is not visible to the rest of the organization. As Brady and Schreiber suggest, Brenda needs to find a way to make her argument throughout the year, not just in the performance review. More visible documentation, such as the examples below, offer opportunities for

people like Brenda to make their valuable but distinct roles a more visible part of the organization's culture and workflow.

Below, I illustrate the effort and expense of developing a Lean culture and provide examples of semi-permanent documents TPCs should use to effectively define their role and value in an organization. As my observations of Lean trainings show, the role of communication is acknowledged as important to the implementation and sustainability of Lean culture, but there is no acknowledgement of professional communication experts or specialized expertise needed for professional communication.

As Sullivan et al. (2003) suggest above, integration into a company's culture is key to making changes. I argue that it is also key to understanding how organizational structures shape your role and how it relates to other roles (e.g., job titles and workflow). These efficiency philosophies construct a particular work culture and structure; therefore, they are essential to truly understanding and negotiating organizational culture.

### Cultivating Lean Culture

I conducted an ethnographic study of a series of trainings that were part of a university Lean initiative from May 2012 to October 2012. I observed, but did not participate in, the trainings. This particular phase of the overall Lean initiative was directed at staff members from areas including IT, marketing, accounting, human resources, housing, transportation, and dining. Though the setting is a university, the professionals involved in these events would be represented in workplaces outside of higher education. Participants were facilitators (those tasked with being resources for Lean implementation for their area), team leaders (those tasked with leading Lean improvements for their area), and team members. Each month between May 2012 and November 2012, the same group of professionals attended the training. Two corporate consultants led the trainings, hereafter referred to as training consultants so as not to be confused with the Lean facilitators they were training. The training consultants began to reach out to a wider audience, with short seminars open to the whole university community in August 2012.

In total, I observed 7 trainings, including one Kaizen event, for a total of over 25 hours. I also observed a one-hour, campus-wide seminar. The

trainings were held each month for 7 months, though I was only able to attend through month six (See Appendix A for a sample training schedule). Each monthly training was an all-day or, in most cases, a two-day event. These events included facilitator trainings, trainings that included facilitators and their teams, and special activities (e.g., gembas or walk-throughs) at team sites. The trainings I observed were facilitator trainings.

Kaizens, which are large problem-solving events, bring together multiple stakeholders and can last multiple days. In this case, the Kaizen lasted 8 hours. A gemba is a walk-through of the workspace to provide management a grounded understanding of workflow. Lean and Lean Six Sigma are flexible and have several common concepts and tools, but not all organizations or approaches will emphasize or use all of them. For example, Ries (2011) does not emphasize the 5S (Sort-Straighten-Shine-Standardize-Sustain) tool in *The Lean Startup*, but it is emphasized in the trainings I observed and in other Lean approaches (e.g., Liker, 2004; Liker & Convis, 2012). These concepts (e.g., Kaizen and gemba) often reveal the Japanese roots of these philosophies as well as the insider language developed for workplace cultures developed from and using Lean. A glossary of terms used in this article is included in the appendix, but it should not be considered an exhaustive list.

Topics covered during my study are common to Lean and included Plan-Do-Check-Act (PDCA), Sort-Straighten-Shine-Standardize-Sustain (5S), value stream and process mapping, A3 problem solving, Socratic questioning, metrics, standardized work, and continuous improvement. Other topics and documents covered included one-pagers, balanced scorecards, swim lanes, visual cues, A3 reports, and root causes.

The two training consultants promoted an organic approach to implementing a Lean culture change in an organization. They increasingly emphasized that the tools of Lean could be used as weapons and that, facilitators particularly, should model tool v. weapon use. For example, they strongly encouraged getting feedback from all stakeholders before defining problems or solutions and prior to implementing any Lean initiatives. They acknowledged failed Lean and other efficiency initiatives in organizations (e.g., General Motors and Chrysler) and highlighted the importance of buy-in and people as key to the effectiveness and sustainability of Lean culture.

Some themes emerged, including attention to history, value and waste, empowerment, metrics and standardization, critical thinking and problem solving, sustainable culture, and communication. Here, I focus on the sustainable culture, value and waste, and communication themes:

- **Sustainable Culture Theme.** Developing rather than imposing a lean culture is essential to successfully implementing Lean. Facilitators noted that Lean implementation fails when there is no buy in and people are not considered: According to the training consultant leading the May event, “Culture is key—the belief in the system.” Lean can be imposed quickly, but to develop a culture takes time and respect for people. Statements made by the training consultants such as “Lean is a suite of tools and a kind of thinking” and “Lean doesn’t work if you use a label and misuse a philosophy—you must consider people” bring home the notion that developing a culture is also developing a belief system and a kind of thinking.
- **Value and Waste Theme.** The corporate training consultants identified several tools to help identify value and waste. Plan-Do-Check-Act (PDCA) is an iterative process that governs Lean activity. It is planning how to do something, executing the task according to that plan, checking the original plan for wasteful steps, and standardizing the steps after all waste has been identified and removed. Plan-Do-Check can take several runs before solidifying the process with Act. Processes are then reviewed on a regular basis to ensure no updates are needed. 5S is more about the work environment, to create visual cues and an organized workspace in order to increase speed and reduce motion. Several tools, including PDCA and 5S, help identify value and waste, but process and value-stream mapping are perhaps the most important because these define work and workflow rather than focusing on organizing the physical work space. PDCA is the guiding process for all activities; it governs the development of processes and value streams and the use of problem solving tools.

Both value stream mapping and process mapping follow the iterative process of PDCA. Value stream mapping helps visualize all of the steps and processes a product or service undergoes before



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reaching the customer. According to the training consultants, “Value-stream mapping helps you see the complexity of a job—helps create respect for others’ work.” It is a way to identify waste on a larger scale and defines the workflow, whereas process mapping is for individual tasks.

According to the training consultants, value and waste are not always easy to see or easy to measure. Using an example of a coffee shop in which a barista chats with customers, they argue that the chatting, while increasing the time needed to make each drink, actually contributes to the atmosphere and experience of the shop itself and therefore adds value. “Sometimes ‘non-value added’ is actually ‘value added’” (June 25). The facilitators are also very clear that there is no one way to do metrics and that metrics and inappropriately assigning waste are two ways in which Lean can be used as a weapon and not as a tool. On the other hand, they argue what cannot be measured cannot be managed.

- **Communication Theme.** The communication theme is a subtheme of the other themes. It’s not nearly as explicit as the tools (e.g., PDCA) and concepts (e.g., waste) but does get mentioned often. Lean tools and concepts are identified as communication tools and concepts. For example, according to training consultants, “process mapping is a communication tool” and “metrics are a good communication tool.” Communication is also identified as important to bridging silos and bringing teams and stakeholders together.

### Discussion

The goal of this Lean implementation was to effect cultural change and organizational thinking. Trainings show the development of Lean culture as a lengthy and expensive process, taking people and other resources away from the organization’s work. My observations of these Lean trainings offer only one example of the work of Lean transformation, but it gives us an idea of the time and commitment an organization can put forth to build a particular kind of culture. And if embedding efficiency philosophies is important enough to devote resources on the level shown in my observations, our work in relation to studying organizational work and practices ought to consider efficiency philosophies like Lean important contextual components.

Based on this training, there is opportunity to define TPC value. Communication is valued, but it’s not clear that the trainers are considering there might be important roles for professional communication and usability experts. What is clear is that this is an area for TPCs to take leadership roles if they make their expertise both visible and valued. These trainings suggest that communication will just happen if everyone is engaged in Lean thinking. TPCs know professional and technical communication practices are not simply products of Lean thinking—they need to find a way to tie their expertise to the efficiency management philosophy. The documents discussed below are opportunities to solidify connections between efficiency management philosophy and TPC role and value in a visible way.

### Efficiency Documentation

In this section, I analyze two documents developed in efficiency management cultures. Unlike the documentation described above (e.g., one-pagers) these are examples of more permanent documentation that form or describe organizational structure and culture. I include one internal and one customer-facing document. Because these documents are more permanent and visible to the organization, they can more easily be referenced in meetings and performance reviews, thus carrying a certain amount of power. They, and similar types of documents, can be used as sites for establishing and defining value because they are places where work is explained (i.e., made visible) and revisited, where culture and workflow are standardized and fixed (even if only to be revisited). In examining these documents, I illustrate that management philosophy is an important contextual factor that affects both culture and workflow, two areas that affect value work.

#### Internal: NAVAIR

I begin with a visible internal document used to facilitate work, written for other employees and not for customers. It is a Standard Work Package (SWP) for the Naval Air Systems Command (NAVAIR) titled: “Foreign Military Sales/Cooperative Programs Technical Data/Publication Review, and Sanitization/Editing.” It was updated on July 30, 2014. There are two units identified as owning the document, which could help to explain the lengthy title (NAVAIR, 2014, p. 2). It also has two SWP numbers, presumably for each of



the co-owners. The two co-owners and the two SWP numbers suggest that at least two numbering systems exist within NAVAIR and that this document is an attempt to bridge two parts of the organization.

The table of contents lists the following sections: Purpose, Input/Suppliers, Owner, Review and Sanitation Requirements, Skills Required, Resources, Work Steps, Completion Requirements, Product Format and Configuration, and Metrics. “Technical data/publication management knowledge” and “publication authoring (document development, editing) knowledge” are two skills listed in the Skills Required section. The Inputs/Suppliers and Work Steps sections explain when and under what circumstances the document is used, who (e.g., department, SME, etc.) or what circumstance initiates the work process, and the steps needed to perform the process.

The purpose of this kind of document is to explain work processes, who should initiate the work processes, resources required, and skills and knowledge required. The SWP shows opportunity to enter skills and strategically explain work or tasks—it is a chance to show how seemingly small tasks require extensive and specialized knowledge (e.g., publication management and document development). On the other hand, the external document described below is an example of customer-facing documentation, which references processes.

### External: Xerox

Xerox subscribes to the Lean Six Sigma philosophy in a public way. It can be found on the website and in documents directed to customers and shareholders (e.g., see “Xerox Lean Six Sigma and Quality Go Hand in Hand”). The company publishes case studies of how it has used LSS to solve problems for clients on its website. Some of these case studies involve TPC work. One case study for Aliant Communications is titled “Re-engineered Customer Bills and Print Production Processes Build Loyalty, Boost Marketing and Lower Costs.” The case describes how bills were redesigned to improve customer understanding and how there was no interruption in service. In the case study, two kinds of work are recognized: the bill redesign, completed by “Communication Engineering experts” and the “transition involving technology, staff, and sensitive customer data” (“Reengineered Customer Bills”).

The transition itself is explicitly credited to expertise in Lean Six Sigma. Regarding the bill redesign, the case

describes communication engineering experts as “. . . using disciplined processes and methodologies to analyze the problems with the existing format and carefully develop, test and refine a long list of high-impact improvements” (“Reengineered Customer Bills”). The processes and methodologies referenced may be similar to the internal document above from NAVAIR, which underscores the prominence and strategic importance of these process documents.

## Conclusion

Management philosophies inform both workflow and organizational culture. They are underlying principles that inform or govern how workplaces are organized, including how resources will be allocated, how people will work and interact with other roles in the company, and how projects will be developed and implemented. Understanding both how workplace culture is constituted by efficiency management philosophy and that it takes time and effort to effectively incorporate that way of thinking into an organization is key to understanding how value of work is established and affected. By established, I mean understanding how the efficiency philosophies inform workflow and building from that knowledge to fit into, inform, and improve that workflow. TPCs are well positioned as symbolic analysts to shift with organizations and improve them along the way.

While understanding how efficiency management philosophy informs culture and workflow is important for all employees, it is particularly important for TPCs, whose work is often not well understood by management. Documents like the ones described above suggest there is opportunity to define one’s work as part of and valuable to an efficiency culture. And, as Hart and Conklin (2006) suggest, TPCs are often writing such documents. There is also a line between defining one’s work as part of a culture and allowing a culture to define work. TPCs must have some control over how the processes that define their work are written and how these processes fit into larger contexts (e.g., workflows and value streams).

Efficiency can be a double-edged sword—more documents (e.g., processes and performance reviews) and fewer people form management structures in flattened organizations. TPC has an opportunity to create communication processes across entities, but the specialized knowledge work involved needs to be foregrounded and acknowledged. TPC needs to play

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a proactive role in ensuring this work and their role is acknowledged and researchers need to explicitly gather data about strategies employed in this regard. One way to get this important work acknowledged is to explicitly tie TPC skills and knowledge to the efficiency management philosophy. For example, rhetorical skills (e.g., audience analysis) and usability are necessary for developing and facilitating information across processes in order to keep projects and product development on track.

The bottom line is that technical and professional communication is essential to efficiency management philosophies and the cultures they constitute. It is important to keep all stakeholders up to date on a project, to keep projects moving forward, and to capture and disseminate important project information. TPC is essential for complex user analysis and for developing and documenting solutions. As shown above, communication is considered important to effectively implementing a sustainable Lean culture, but the role of TPCs, or at least the work of professional and technical communication, isn't necessarily foregrounded.

As others (e.g., Giammona, 2004) have argued, technical communicators need to learn to communicate effectively with management—to make the connection between the organization's needs and their specialized knowledge and skills—but TPCs may be working hard to communicate with management and getting nowhere if they're not connecting to management philosophy. Understanding the underlying philosophies can help TPCs to understand not only the language of business for that organization but also how they can effectively navigate and improve it. Acknowledging the effect of efficiency management philosophies on the culture and workflow of the organization can help TPCs understand how (at least in theory) they are empowered by the system. In other words, efficiency management philosophies must inform their system thinking.

There are implications for instructors and researchers as well. As we train students to use mapping theories (e.g., articulation and assemblage and actor-network theory) to understand large and expanding contexts (e.g., organizations, industries, and global networks), we can use efficiency management philosophies as concrete examples of how cultures are constructed in individual systems. Acknowledging these philosophies is essential to understanding and navigating these contexts. Efficiency management philosophies also provide concrete examples for instructors wishing to incorporate system thinking.

When we conduct workplace studies, these philosophies also need to be acknowledged and foregrounded. I have offered one possible strategy here to use structural documents to gain visibility and establish value. Workplace studies may identify and explicitly study other strategies. Practitioners gain from both employing such strategies and sharing their own.

If TPCs continue to struggle to establish value even when tying their knowledge and skills to the philosophies that constitute cultural practices, it is incredibly important that we are studying that as well. Management books and the Lean implementation example above stress employee empowerment and critical thinking, and the trainings also allude to Lean as constituting a sustainable, people-oriented environment versus a controlled environment. The literature, however, supports the potential for an overly controlled environment. In the extreme, Snee's work (Snee, 2010; Snee & Hoerl, 2009) advocates spreading Lean Six Sigma across organizations and declares that engineers as best qualified for management positions based simply on their understanding of statistics. On the other end of the spectrum, Eric Ries (2011) argues that Lean is flexible and generative enough to use as a framework for start-ups. Where Snee is seeing the potential to rigidly standardize and measure all work, Ries sees the framework as helpful for keeping creative work on track.

Thus far, TPC researchers have made connections between TPC value and workplace culture, suggesting the need to "speak the language of business" (Sullivan et al., 2003, p. 124), particularly when communicating with management. To this important conversation, I add efficiency management philosophy, which informs culture, workflow, and the language of business. As the literature and trainings described in this article suggest, efficiency management philosophies and associated toolkits can be used to impose control or to guide creativity and knowledge work. There is a place for TPCs to ensure they are used to enhance knowledge work, not deskill it.

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### About the Author

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## Toward a Critical Alignment

### Appendix A

#### August Lean Training Agenda

[Insert Building Name] (unless otherwise stated)

#### Monday, August 13

##### Lean Implementation Leader and Facilitator Training Groups

9:00 Welcome, Review Discussion and Q&A  
 10:15 Socratic Questioning  
 11:00 Exercise  
 11:30 Lunch in [Insert Building Name] Cafeteria  
 12:15 Metrics  
 1:00 Exercise and Report Out  
 2:45 Knowledge Folders  
 4:30 Debrief and Wrap-up  
 Conclude by 5:00

#### Tuesday, August 14

##### Lean Facilitator Training Group

8:00 Metrics for projects  
 9:45 Basic Facilitation Skills  
 11:00 Reflection  
 Conclude by 11:15

##### Campus Session

11:30 Plan, Do, Check, and Adjust

##### Lean Implementation Leaders

1:00 Leading change in your area  
 1:30 Leadership Standardized work  
 2:00 Kaizen Process  
 2:15 Exercise  
 Conclude by 3:15

## Appendix B

### Lean Six Sigma Glossary<sup>1</sup>

A3 problem solving/A3 reports – A3 problem solving or reporting is getting all of the information you need down on a single page, often including graphics.

5S – Sort-Straighten-Shine-Standardize-Sustain is about making the work environment visual and organized in order to reduce injury, error, and wasted effort.

Gemba – A gemba is walking through a work environment to gather information about what's happening on the ground.

Kaizen – A Kaizen is a concentrated, problem-solving event where team members come together to focus solely on solving a particular problem.

Lean – Lean is an efficiency philosophy focused on speed and agility. It differs from mass production in that it does not focus on trying to make the most in the least amount of time, but trying to make exactly the right amount to meet customer needs before shifting to meet different needs, reducing wasted steps and wasted resources.

Lean Six Sigma – Lean Six Sigma is a hybrid of Lean and Six Sigma, using tools from both. There is no specific standard form of Lean Six Sigma.

PDCA – Plan-Do-Check-Act is an iterative process for uncovering waste and determining value. It is used in many Lean environments. It is the process of continuous improvement. Other variations include DMAIC (Define-Measure-Analyze-Improve-Control).

Six Sigma – Six Sigma is an efficiency philosophy focused on quality, on eliminating defects. Six Sigma focuses on reducing variation and complexity.

Value stream mapping – VSM brings together step to create a product or product family usually in a flowchart. The document also includes information about processes, material flows, and information flows.

<sup>1</sup> These terms are not an exhaustive list of the concepts and tools associated with Lean and Lean Six Sigma. These definitions were derived from:  
George, M. O. (2010). *The lean six sigma guide to doing more with less: Cut costs, reduce waste, and lower your overhead*. Hoboken, New Jersey: John Wiley & Sons, Inc.  
Liker, J. K. (2004). *The Toyota way: 14 management principles from the world's greatest manufacturer*. New York: McGraw-Hill.



# The Image of User Instructions: Comparing Users' Expectations of and Experiences with an Official and a Commercial Software Manual

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and Joyce Karreman, University of Twente

## Abstract

**Purpose:** The market for (paid-for) commercial software manuals is flourishing, while (free) official manuals are often assumed to be neglected by users. To investigate differences in user perceptions of commercial and official manuals, we conducted two studies: one focusing on user expectations and one on user experiences.

**Method:** The first study was an online experiment, in which two groups of participants answered questions about their expectations of a (commercial or official) manual. The second study was a 2x2 experiment, with perceived source (commercial or official) and the actual content of the instructions (commercial or official) as independent variables, and task performance and users' judgments as dependent variables.

**Results:** The first study showed that users have different expectations of commercial and official manuals, and overall think more positively about a commercial manual. The second study showed that perceived source had a significant effect on task performance: Participants worked better when they thought they used a commercial manual. No differences were found regarding participants' judgments of the manual.

**Conclusion:** Our research indicates a potential image problem of official user manuals. Even though we found no evidence for a lower quality of the official manual's content, users' relatively negative expectations of an official manual may discourage them from using the official user instructions. The second study showed that the perceived source (commercial/official) may even affect the actual task performance of users.

**Keywords:** image, manual, not reading, user documentation, user guide

## Practitioner's Takeaway:

- Official software manuals appear to suffer from a relatively bad image, which may negatively affect people's inclination to actually use these manuals.
- Users' expectations regarding official manuals are less positive regarding connection with real-life tasks, language and instructions, and layout.
- Users' expectations regarding official manuals tend to be more positive regarding expertise of the writer(s).
- Irrespective of their content, commercial manuals may lead to better task performance due to a better image than official manuals.
- It seems worthwhile to explore ways of making official manuals stand out more, for instance by using quality marks or making them explicit product assets.

## Introduction

Although the field of technical communication has broadened considerably, providing user support remains one of the core tasks of technical communicators. Recent literature shows that the nature of user support is changing, with more attention to instructional videos (e.g., Swarts, 2012; Van der Meij & Van der Meij, 2013; Ten Hove & Van der Meij, 2015) and user forums (e.g., Frith, 2014; Swarts, 2015), but manuals and user guides are still most prevalent. For several decades, technical communication scholars and practitioners have worked on the optimization of written user instructions (Van der Meij, Karreman, & Steehouder, 2009). Despite these efforts, there is not always much optimism among practitioners about the extent to which manuals, user guides, and other types of user documentation are actually used (Rettig, 1991; Senvold, 2015).

It is important to realize that the option to use a manual is one that has to compete with many alternatives people have, most notably exploring by themselves, asking other people for advice, and searching the Internet. Schriver (1997, p. 166), for instance, argued that “most people choose to read and to keep reading only when they believe there will be some benefit in doing so and only when they cannot get the same information in an easier way (for example, by asking someone else).” However, she also presented survey results showing that a large majority of consumers use manuals to some extent when they try out new functionality of products, although they seldom read them cover-to-cover (pp. 213–214), and that consumers see a clear instruction manual as an important asset of products (p. 223). She also found that participants quite often assign the blame to the manual when experiencing difficulties with a product (pp. 217–222), which, of course, is not a positive finding but nevertheless suggests an important role of manuals from the users’ perspectives.

These findings resonate in various earlier and later studies. Some evidence was found for the potential added value of manuals. Aubert, Trendel, and Ray (2009), showed in an experiment that pre-purchase exposure to a high-quality user manual positively affects product evaluation and purchase intention. In another experiment, Pedraz-Delhaes, Aljukhadar, and Sénécal (2010) found that users’ evaluation of the documentation affects their evaluations of the product and the company behind the product. Wogalter,

Vigilante, and Baneth (1998) focused on the context of reselling used consumer products and found that the availability of a manual would be an asset for selling used products, and that people are even willing to pay extra to have one. Van Loggem (2013) took an analytic approach and argued against the “persistent myth” that well-designed artifacts do not need documentation: In the case of intrinsic complexity, it is impossible that the user interface, no matter how well designed, will suffice to support all functionality.

Regarding the actual use of manuals, the available research led to varying results. Szlichcinski (1979), using a telephone system in a laboratory setting, found that the majority of the participants (83%) did not use the user instructions. Wright, Creighton, and Threlfall (1982), on the other hand, found that a majority of the consumers (66%) read at least some of the user instructions when using electric or nonelectric products. Jansen and Balijon (2003) came up with even higher percentages: More than 70% of their participants indicated to always or often use the manual for products; only 8% reported never using manuals. Van Loggem (2014) provided an overview of earlier studies, with use percentages ranging between 57% and 96%, and presented new data for professionals and students that fell within this range (90% and 70%, respectively). Based on these and Schriver’s results, it seems safe to assume that users at least occasionally refer to user instructions when working with products or tasks that are unfamiliar to them.

Other studies focused on determinants of using user instructions. In a study among senior users (age range 65–75), Tsai, Rogers, and Lee (2012) showed that user manuals play an important role for this age group, particularly for the purposes of better understanding the product, recalling forgotten functions, and preventing mistakes. In a comparative study, Lust, Showers, and Celuch (1992) showed that seniors use manuals significantly more than younger users. The aforementioned difference Van Loggem (2014) found between professionals and students seems to point in the same direction, as the difference between the two groups has an age dimension. Given the drastically changed media landscape, the difference between old and young users may have increased in recent years and may further increase in the future.

More intrinsically, Wright, Creighton, and Threlfall (1982) found that users’ estimation of the complexity

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of operations strongly affects their reading intentions. In the same vein, Wiese, Sauer, and Rüttinger (2004) found that product complexity is the best predictor of manual use. Celuch, Lust, and Showers (1992) showed that prior experience and time considerations are variables distinguishing readers from nonreaders. Finally, Lust, Showers, and Geluch (1992) found a broader range of predictors, including people's general perceptions of manuals.

In the research reported in this article, we will explore people's perceptions of manuals more extensively by focusing on the source credibility of manuals. Our research was inspired by the observation that users may, to some extent, be reluctant to use the official manuals of software packages but at the same time be willing to pay for a commercial manual for their software (cf. Van Loggem, 2013). One can think of the "For Dummies" series (e.g., *Excel for Dummies*), the "Bible" series (e.g., *Excel 2016 Bible*) published by John Wiley, or the "Missing Manuals" series (e.g., *Excel 2013. The Missing Manual*) published by O'Reilly. This seems to indicate that the source of the manual (official versus commercial) plays a role in users' views of manuals. So far, the technical communication literature has not addressed how users perceive such source differences. Coney and Chatfield (1996) conducted analytical research into the differences between both types of manuals and proposed that "the determining factor in the appeal of third-party manuals [...] is the rhetorical relationship between the authors and their audience" (p. 24). Investigating users' expectations and experiences with official and commercial manuals may shed light on user perceptions.

In two separate experiments, we investigated the effects of source (official versus commercial manual) on users' expectations and experiences. In the first experiment, we focused on the expectations users have when they are confronted with an official or a commercial manual. The second study was a 2x2 experiment, in which we manipulated the source of the information and the actual content to investigate the effects of perceived source on the experiences of users. The two studies were approved by the IRB of the University of Twente.

### Image, Source Credibility, and User Instructions

It is very common that we form mental images of phenomena we encounter. We use such mental images

to simplify and make sense of the world we live in, for instance, when making behavioral decisions. Images can be based on prior experiences, hearsay, or associations, and can have varying degrees of elaboration—from overall impressions (low), to a number of specific beliefs that lead to an overall attitude (medium), to a complex network of meanings (high) (Poiesz, 1989). In practice, we can form images at various levels. Hsieh, Pan, and Setiono (2004), for instance, distinguish between product, corporate, and country image, which may simultaneously affect purchase behavior. The assumption in our study is that software manuals will have a certain image among users, but that it may be fruitful to differentiate between official and commercial manuals.

This is related to the literature about the effects of source credibility. Research shows that source credibility plays an important role in the way people handle information. In the context of persuasive communication, research suggests that people may be more effectively convinced or persuaded when the source of information is perceived to be credible (Pornpitakpan, 2004). Johnston and Warkentin (2010) showed positive effects of source credibility on people's intentions to follow recommended IT activities—a context that is in fact closely related to that of user instructions. Other studies found that source credibility may affect people's willingness to expose themselves to information. For instance, Knobloch-Westerwick, Mothes, Johnson, Westerwick, and Donsbach (2015) showed that source credibility, operationalized as the difference between official institutions without self-interest in the issue at hand versus personal bloggers, affects people's time spent on Internet messages about political issues. Winter and Krämer (2014) showed that source credibility positively affects people's decisions about which Internet sources they will read and to what extent they will read them. In their study, source credibility was manipulated by source reputation as well as by the ratings of others.

The effects of source credibility may be further explored by connecting them to the broader concept of trust (cf. Mayer, Davis, & Schoorman, 1995). Two important factors that are distinguished are competence—in the case of user manuals, this boils down to software expertise and technical communication competencies—and benevolence—a perceived willingness to serve the users and their needs.

## Study 1: Users' Expectations

Our first study aimed at investigating users' expectations of official and commercial manuals. To do so, an online experiment was designed, with two conditions (official versus commercial manual), in which participants had to answer questions about their expectations of the manual. The research focused on Microsoft Excel.

### Method

**Participants** The sample consisted of 69 students from the University of Twente. The students received participant credits for participating (students in the first years of our program are required to act as participants in a number of studies). They were randomly assigned to one of the two conditions. Table 1 provides the background characteristics of the two groups of participants. Differences between the two groups were tested, and there was no significant difference found for any of the background variables.

**Manipulation** One group of participants was exposed to the official manual (*Microsoft Excel 2010 Official Offline Help Manual*), and the other group to a commercial instruction book (*Excel 2010 For Dummies*). The manipulation consisted of three images, presented side by side: the cover, the table of contents, and a random page of the instructions. Both versions were equally long, contained one color page and two black-and-white pages, and were representative for the look and feel of both types of manuals.

**Procedure** Data were collected using Qualtrics, a tool for online surveys and experiments. The first screen provided an introduction to the research. Participants were told that they would be exposed to a software program plus manual, and that their thoughts about the manual were the focus of the research. They were informed that they would not have to read the manual for the research. The second screen provided basic information about Excel, including a screenshot. On the third screen, the manual version was presented. After that, questions about the manual were asked, chunked on different screens.

**Instrument** All constructs in the questionnaire were measured using five-point Likert scales. Above all sets of questions, the following overall instruction was given: "Imagining using this manual, what do you think the manual will be like?" Seven constructs were included in the research: connection to real-life problems, ease of locating information, expertise, language and instructions, layout, redundancy, and source preference.

These constructs were meant to reflect different aspects of competence and benevolence, and proved to be statistically distinguishable in a factor analysis (with varimax rotation). Three constructs that were originally included in the questionnaire (assumptions about users, empathy, and quality of the information) were removed because they did not appear to be statistically distinguishable constructs.

The construct *connection to real-life tasks* involved the extent to which the manual was expected to support realistic tasks that people want to perform with the software. It was measured with two items (two other items were deleted based on the factor analysis) (Cronbach's  $\alpha = .70$ ). The two items were "This manual connects the functionality of Excel to real-world tasks of users," and "This manual focuses strongly on what users want to do with Excel."

The construct *ease of locating information* focused on participants' expectations of the findability of information in the manual. It was measured with four items (two items were deleted based on the factor analysis) (Cronbach's  $\alpha = .81$ ). Examples of items are "I will find the answers to my questions without much effort in this manual," and "This manual is clearly structured."

The construct *expertise* focused on the manual's writers' knowledge of the software, and was measured with four items (one item was deleted based on the factor analysis) (Cronbach's  $\alpha = .77$ ). Examples of items are "The authors of this manual are experts in using Excel," and "The authors of this manual know different solutions to achieve the same goal in Excel."

The construct *language and instructions* focused on the expected quality of the (textual and visual) instructions in the manual. It was measured with five items (three items were deleted based on the factor analysis) (Cronbach's  $\alpha = .85$ ). Examples of items are "The text of this manual is easy to understand," and "This manual contains figures and illustrations where necessary."

The construct *layout* involved participants' expectations of the visual appearance of the manual, and was measured with three items (two items were deleted based on the factor analysis) (Cronbach's  $\alpha = .71$ ). Examples of items are "The layout of this manual is user-friendly," and "The layout of this manual is inviting."

The construct *redundancy* focused on participants' expectations of irrelevant information and wordiness of the manual. It was measured with four items (one item was deleted based on the factor analysis) (Cronbach's  $\alpha = .78$ ). Examples of items are "This manual



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contains a lot of information that is not relevant to users,” and “This manual contains too much information.”

The construct *source preference* involved the extent to which participants would prefer the manual over other possible sources, and was measured with three items (two items were deleted based on the factor analysis) (Cronbach's alpha = .79). Examples of (negatively worded) items are “I would prefer to use Google instead of using this manual,” and “I would prefer to use the online help instead of using this manual.”

### Results

The data were analyzed using a multivariate analysis of variance, with the manual version as independent variable, and the seven expectation constructs as dependent variables. The first step in the analysis involves the multivariate test results, which focuses on the effects of the independent variable on the conglomerate of dependent variables. A significant multivariate test result is required before the univariate effects on separate dependent variables can be examined. This appeared to be the case (Wilks' lambda = .61,  $F(7,59) = 5.48$ ,  $p < .001$ , partial  $\eta^2 = .39$ ). Overall, the manual version had a strong effect on participants' expectations.

The second step focuses on the effects of the manual version on the seven dependent variables. Table 2 presents the mean scores in the two conditions and the univariate test results. As can be seen, participants had

more positive expectations of the commercial manual for four of the seven dependent variables: connection to real-life tasks, language and instructions, layout, and source preference. The commercial manual was expected to have a stronger connection to real-life tasks, to be more effective in language use and instructions, to have a more appealing layout, and to be a stronger competitor to other possible sources of information than the official manual. The effect sizes (as indicated by the partial  $\eta^2$ ) refer to practically meaningful effects.

On the other hand, participants tended to have relatively high expectations of the writers' expertise in the case of the official manual, as compared to the commercial manual. They expected the writers of the official manual to know more about the *Excel* software. No differences were found regarding the expected ease of locating information and the amount of redundant information in the manual.

Among the seven dependent variables, source preference can be seen as an indicator of behavioral intentions, as it does not focus on specific aspects of a manual but involves participants' preferences for the manual compared to other information sources. To test the relationship between the six expected manual properties and source preference, we conducted a linear regression analysis. Surprisingly, the six constructs did not have any predictive value for the participants' scores on source preference ( $R^2 = .01$ ,  $F(6,60) = 1.05$ ,  $p = .40$ ).

**Table 1. Background Characteristics of the Two Groups of Participants (Study 1)**

		Official manual	Commercial manual
<b>Gender</b>	Male	10	9
	Female	22	26
<b>Age</b>	M (SD)	19.3 (1.8)	20.2 (2.0)
<b>Education level</b>	Bachelor's student	25	30
	Master's student	7	5
<b>Experience with Excel</b>	Yes	31	33
	No	1	2
<b>Estimated Excel skills</b>	Beginning user	27	26
	Advanced user	4	7
	Expert user	0	0
<b>Percentage of Excel functionalities used</b>	M (SD)	18.5 (15.5)	20.2 (19.4)
<b>Experience with manuals in general</b>	Yes	5	2
	No	26	31

**Table 2. Participants' Expectations Regarding the Manual**

Constructs	Official manual M (SD)	Commercial manual M (SD)	Univariate test result
Connection to real-life tasks	3.3 (.7)	3.7 (.6)	$F(1,65) = 7.59, p < .01$ , partial $\eta^2 = .11$
Ease of locating information	3.5 (.7)	3.7 (.7)	$F(1,65) = 1.06, p = .31$
Expertise	4.1 (.6)	3.8 (.7)	$F(1,65) = 3.57, p = .06$ , partial $\eta^2 = .05$
Language and instructions	3.6 (.6)	4.1 (.5)	$F(1,65) = 10.04, p < .005$ , partial $\eta^2 = .13$
Layout	3.3 (.7)	3.8 (.6)	$F(1,65) = 9.99, p < .005$ , partial $\eta^2 = .13$
Redundancy	2.9 (.4)	3.2 (.8)	$F(1,65) = 2.73, p = .10$
Source preference	2.4 (.7)	3.1 (1.0)	$F(1,65) = 11.83, p < .005$ , partial $\eta^2 = .15$

Note: Variables measured on five-point scales (1= negative; 5= positive)

## Conclusions

The results of the first study suggest that the commercial manual has a better image than the official manual. The findings acknowledge that the writers of the official manual are closer to the software, and thus may have more software expertise, but think that the writers of the commercial manual will do a better job providing them with the information they want. The added value of the commercial manual involves content (connection to real-life tasks) and formulation and visuals (language and instructions, and layout) but not the structuring (ease of locating information) and redundancy. In general, participants would be more willing to use the commercial manual compared to other possible sources than to use the official one compared to other sources (source preference).

## Study 2: Users' Experiences

Our second study aimed at investigating users' experiences using an official or commercial manual. These experiences may be triggered by the actual content of the manual and by the perceived source. We therefore conducted a 2x2 experiment, with content (official versus commercial) and perceived source (official versus commercial) as independent variables (see Table 3). We included both official and commercial content in our experiment, because it is conceivable that the congruence between perceived source and actual content may affect users. Limiting our research to either official or commercial content would then lead to biased results. It must be stressed that a comparison of the effects of official and commercial content is beyond the scope of our research, as we cannot be sure of the representativeness of the specific combination of

tasks and instructions for the complete manuals. The dependent variables involved both task performance (effectiveness and efficiency) and participants' judgments.

**Table 3. Experimental Design**

	Perceived Source	
Content	Official	Commercial
Official	1	2
Commercial	3	4

## Method

**Participants** The sample consisted of 83 students of the University of Twente. The participants either received participant credits or a small gift for their participation. They were randomly assigned to one of the four conditions. Table 4 shows the participants' background characteristics. Only one significant difference in background characteristics was found: Participants in the two conditions with the commercial manual content estimated the percentage of their usage of the Excel functionality significantly higher than participants in the two conditions with the official manual content did ( $F(1,73) = 5.14, p < .05$ ). However, this background variable appeared to have no significant correlation with any of the dependent variables.

**Manipulation** The experimental materials were based on the same two manuals as used in the first experiment: the *Microsoft Excel 2010 Official Offline Help Manual* (official manual) and *Excel 2010 For Dummies* (commercial manual). We selected the content of both manuals that was relevant for the two tasks. We also added a section on conditional formatting

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to somewhat complicate the sub task of locating the right information. This amounted to 12–15 pages of text and images. Four versions of the manual were made by combining the communicated source (official versus commercial) and the content (official versus commercial). Text, images, layout, and structure were exactly the same as in the original manuals. Only one small layout change was made: In the version combining the content of the commercial manual and the source of the official manual (condition 3 in Table 3), the font of the headings was replaced with a more official font, to give it a more official look and feel.

**Procedure** This experiment was conducted in individual sessions in separate, quiet rooms at the university campus, in the presence of a facilitator. The participants were given two tasks with a fictitious “student data” file in *Excel*. The first task involved restructuring the entire file using the students’ ages as the primary sorting criterion and their last name as the secondary. The second task involved making sure that the name columns (first and last name) and the headings row would always be visible, no matter how far you would scroll down or to the right (this is called *freezing panes* in *Excel*).

Participants were encouraged to use the manual when working on the tasks. They were not allowed to use other sources of information, such as online help or the Internet. The maximum time for completing the tasks was 30 minutes. The facilitator kept track of the time during the session. If participants were not able to finish the tasks within 30 minutes, they were asked to stop. After the task execution, participants filled out an online questionnaire regarding their experiences.

**Instrument** Two task performance indicators were collected during the task execution: the number of correct tasks—participants could get 0, 1, or 2 points—and the time taken. Participants’ effectiveness was measured using the number of correct tasks; their efficiency was based on their task-time ratio (the number of correctly executed tasks divided by the time taken in minutes).

For the participants’ judgments, the same seven-construct questionnaire was used as in Study 1, this time with Cronbach’s alphas in the range of .61 and .83. One new construct was included, focusing on participants’ overall experience using the manual (four items, Cronbach’s alpha = .86). For this construct, participants were asked to rate their overall experience with the

**Table 4. Background Characteristics of the Four Groups of Participants (Study 2)**

		Perceived official source		Perceived commercial source	
		Official content	Commercial content	Official content	Commercial content
<b>Gender</b>	Male	10	14	14	10
	Female	10	8	7	10
<b>Age</b>	M (SD)	23.3 (3.4)	22.1 (2.7)	22.6 (2.9)	22.5 (1.7)
<b>Education level</b>	Bachelor’s student	14	15	14	17
	Master’s student	6	7	6	4
<b>Experience with Excel</b>	Yes	18	21	19	19
	No	2	1	2	1
<b>Estimated Excel skills</b>	Beginning user	12	12	11	11
	Advanced user	5	9	8	7
	Expert user	1	0	0	1
<b>Percentage of Excel functionalities used</b>	M (SD)	16.4 (14.2)	29.4 (24.1)	18.4 (14.6)	24.0 (17.3)
<b>Experience with manuals in general</b>	Yes	1	2	7	4
	No	17	19	21	15

experimental manual using semantic differentials, such as “very positive” versus “very negative,” or “very efficient” versus “very inefficient.”

## Results

**Task performance** Table 5 presents the results regarding the task performance of the participants with the four manual versions. As the two dependent variables are related, we used two separate univariate analyses of variance to test the results for significance. For effectiveness (number of correct tasks), two significant main effects were found. There was a significant effect of perceived source ( $F(1,79) = 4.23, p < .05$ , partial  $\eta^2 = .05$ ): Participants who believed that the manual they used was a commercial one outperformed participants who thought they worked with the official manual. There was an opposite main effect of manual content ( $F(1,79) = 4.23, p < .05$ , partial  $\eta^2 = .05$ ): Participants working with the official manual content outperformed the participants working with the commercial manual. As said earlier, this result must be treated with caution, as we cannot be sure of the representativeness of the official and commercial manual excerpts for the complete manuals. No interaction effect was found ( $F(1,79) = .22, p = .43$ ).

For efficiency (the task-time ratio), one significant result was found, regarding the perceived source of the manual ( $F(1,79) = 8.15, p < .01$ , partial  $\eta^2 = .09$ ): Participants who thought to work with the commercial manual outperformed the participants who thought they had an official manual. No main effect for manual content ( $F(1,79) = .63, p = .43$ ) and no interaction effect ( $F(1,79) = .06, p = .81$ ) were found.

**Participants' judgments** The results of participants' judgments regarding the manual can be found in Table 6. In general terms, there were some remarkable differences and similarities compared to the expectation scores in Study 1. As shown by a series of t-tests comparing the scores of Study 1 and Study 2, the actual judgments were significantly lower than the expectations in Study 1 for the variables expertise ( $p < .001$ ), language and instructions ( $p < .005$ ), layout ( $p < .001$ ), and redundancy ( $p < .01$ ). The variables connection to real-life tasks, ease of locating information, and source preference had similar scores as those in Study 1.

The scores on overall satisfaction, being an overarching construct, were tested separately using a univariate analysis of variance. No significant effects were found of perceived source ( $F(1,79) = 2.03, p = .16$ ).

**Table 5. Task Performance Indicators (Study 2)**

	Perceived official source		Perceived commercial source	
	Official content	Commercial content	Official content	Commercial content
<b>Number of correct tasks</b>	1.4 (.6)	1.3 (.7)	1.8 (.4)	1.4 (.6)
<b>Task-time ratio</b>	.09 (.09)	.07 (.06)	.14 (.06)	.13 (.11)

*Note:* Task-time ration was calculated by dividing the number of correctly executed tasks by the time taken in minutes.

**Table 6. Participants' Judgments Regarding the Manual (Study 2)**

	Perceived official source		Perceived commercial source	
	Official content	Commercial content	Official content	Commercial content
<b>Overall experience</b>	3.1 (.7)	3.1 (.8)	2.6 (.9)	3.1 (.8)
<b>Connection to real-life tasks</b>	3.6 (.7)	3.3 (.8)	3.6 (.7)	3.4 (.8)
<b>Ease of locating information</b>	3.5 (.9)	3.5 (.6)	3.7 (.8)	3.4 (.8)
<b>Expertise</b>	3.5 (.5)	3.6 (.4)	3.5 (.6)	3.5 (.5)
<b>Language and instructions</b>	3.5 (.7)	3.3 (.6)	3.8 (.6)	3.5 (.5)
<b>Layout</b>	2.9 (.8)	3.2 (.7)	3.1 (1.0)	2.8 (.7)
<b>Redundancy</b>	2.9 (.8)	2.7 (.7)	2.6 (1.0)	2.5 (.8)
<b>Source preference</b>	2.5 (.9)	2.5 (.9)	3.0 (.9)	2.5 (.8)

*Note:* Variables measured on five-point scales (1= negative; 5= positive)



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and manual content ( $F(1,79) = 1.84, p = .18$ ), and no interaction effect was found ( $F(1,79) = .97, p = .33$ ).

The scores on the seven remaining evaluation constructs were tested using a multivariate analysis of variance. The multivariate test results indicate a significant effect of manual content (Wilks' lambda = .83,  $F(7,73) = 2.15, p < .05$ , partial  $\eta^2 = .17$ ). However, the univariate tests did not result in any significant difference between the two manual versions regarding the seven evaluation constructs. In the multivariate test, no significant effect for perceived source (Wilks' lambda = .94,  $F(7,59) = .72, p = .66$ ) was found and no interaction effect was found (Wilks' lambda = .91,  $F(7,59) = 1.00, p = .44$ ).

### Conclusions

The results of the second study partially confirm that the image of commercial manuals is better than that of official manuals. We did not find significant differences regarding participants' judgments of the manual versions. Both manual content and perceived source did not appear to matter. However, we found significant differences in the participants' performance: Participants performed significantly better, in terms of effectiveness and efficiency, when they believed the manual they used was a commercial manual.

## Discussion

### Main findings

The two studies described in this article show that there may be image differences between official and commercial manuals. The first study showed that these image differences manifest themselves in users' expectations. Participants had significantly more positive expectations about several aspects of the commercial manuals. For one, they expected a better connection between the manual and real-life tasks. On the spectrum between a system orientation and a user orientation, they expected the commercial manual to be closer to the user. This is plausible, as the writers of commercial manuals can be seen as outsiders and expert users, instead of representatives of the company responsible for the software. This connects to the "sense of otherness," which Coney and Chatfield (1996) distinguish in commercial manuals, and which may be cultivated by a strong authorial voice in commercial instructions.

Participants also had more positive expectations about the language and instructions and the layout of the commercial manual. They expected the commercial manual to be more effective in providing instructions and to have a more inviting and user-friendly layout. This may be related to the fact that commercial writers are credited with authorship and may be expected to have a good reputation, whereas the writing team of official manuals remain anonymous. It may also have to do with assumptions about the importance attached to the quality of manuals in the two contexts, as distinguished by Carliner's (2012) business models. Commercial manuals are perceived as core products of the publishers, whereas official manuals may primarily be seen as supporting products for the software company.

Finally, participants would consider the commercial manual to be a more serious competitor to other sources of information than the official manual. This difference does not focus on specific aspects of the manuals but is related to behavioral decisions about using or not using the manual. It may have to do with quality expectations, but our regression analysis showed that participants' expectations regarding the other six constructs did not have any predictive value for their source preference score. It may therefore relate to a less rational inclination to prefer paid advice. A possible explanation for this finding may be found in a more general psychological mechanism, according to which people may be more inclined to use paid-for support than free support. Gino (2008) described this mechanism, which she called the "paid-advice effect," in a series of experiments. Participants could earn money by answering questions but were sometimes offered (either voluntary or obligatory) free or paid advice. Even though they were informed that the advice was a random selection of possible recommendations, they consistently used paid advice more often than free advice. Such behavior may be fueled by a desire to optimally benefit from invested money (this explanation would not be valid in our research, as the participants did not pay for either manual version) but may also be a general notion that paid advice must be better than free advice.

Study 2 showed that the image of the manual remains relevant when people are actually working with the instructions. Participants performed significantly better when they thought their instructions were based on the commercial manual. This is remarkable, as the content of the official manual in fact proved to be

more effective for this particular set of assignments. Of course, the positive score of the content of the official manual should be treated with caution. The research was primarily designed to focus on image, not on content quality. The manual versions were only small excerpts from both manuals; we cannot say anything about their representativeness for the entire manuals, and the tasks the participants had to do were only two of a multitude of possible tasks. However, the discrepancy between the positive effects of a commercial source and the lower effectiveness of the commercial content, within the boundaries of this experiment, provides a clear indication of the image problem of official manuals and the favorable image of commercial manuals. This is the type of image that may become a self-fulfilling prophecy: The mere source effect of a commercial manual leads to more effectiveness in user performance, which in turn may contribute to its positive image.

The fact that we did not find any significant differences in the second study regarding participants' judgments is remarkable. The clear image differences that emerged from the first study disappear when participants are actively working with the manual. The significant effects that manual version had on actual performance was not reflected in the participants' judgments. The phenomenon that experimental research with manuals does result in significant differences in performance but fails to show significant differences in self-report measures, however, is not new. In their research into the effects of motivational elements in user instructions, Looibach, Karreman, and Steehouder (2007, 2013) also found results combining significant effects on task performance and no effects on the self-reported variables. The same phenomenon can also be found in De Jong's (1998) research into the effects of pretesting and revising brochures: The revised versions appeared to be better in terms of comprehensibility or persuasiveness but did not show significant improvements in overall appreciation. An explanation for this lack of significant differences may lie in participants' cognitive workload: When concentrating on performing tasks and/or processing information, it may be too much for participants to also focus on a detailed evaluation of the document they use.

### Limitations and future research

Of course, it should be noted that our findings regarding users' expectations and experiences are based on single experiments, with one particular software package, and

one representative of the available gamut of commercial user guides. Future research could verify whether the effects found in our studies are generalizable to official and commercial software manuals in general.

In the first study, we could not convincingly connect the image findings to participants' intentions to use the manual. Future research that further explores the connection between image differences and use intentions would be interesting. Such research could also take the reverse route by offering participants the choice between an official and a commercial manual, and asking for a preference and motivations.

In the second study, only two specific tasks were selected, corresponding to 12–15 pages in the manuals. Our findings regarding the effects of perceived source may be expected to be robust, as these effects do not depend on the characteristics of the specific content used. Our findings regarding the effects of manual content, however, cannot be seen as generalizable, because the set of tasks and the selection of manual texts may not be representative. These findings merely served as reference point, indicating that the official manual content, at the very least, was not worse than the commercial content.

Future research may also aim to shed light on the underlying mechanism of the differences found in our study. Is the paying an important factor? Or the authorship? Or the publisher or book series? Or a general sense of quality assurance? Experiments that systematically manipulate different versions of official and commercial manuals may help to further explore such factors.

### Practical implications

A limitation to the practical implications of our study is that official manuals will always be official manuals, and, for that matter, commercial manuals will always be commercial manuals. However, our overall finding that image matters, not only for the intention to actually use a manual but also for its effectiveness in use, may inspire manufacturers of products to start paying attention to the image aspects of manuals. It seems to be interesting to explore ways of improving the image of particular manuals, for instance by using quality marks or making usable documentation one of the explicit assets of a product. This connects to earlier discussions in the technical communication literature regarding the value added by technical documentation (Mead,

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1998; Redish, 1995). Two prominent ways of reaching added value are enhancing the user experience and reducing costs. Image may affect both and is to date an underused phenomenon.

### Conclusion

In sum, our research shows that the source of a manual (official versus commercial) matters for users. In our first study, we showed that the source affects users' expectations of a manual. Their expectations of commercial manuals are significantly more positive in several respects. In our second study, we showed that the source also affects users' task performance. Users are more effective when they think they work with a commercial manual. More research is needed to further explore these intriguing findings.

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# Embodied Personas for a Mobile World

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## Abstract

**Purpose:** Personas have long been an important tool for technical communicators to use to understand audiences. However, a recent critique of personas questioned their usefulness as a tool for audience analysis. This article takes that question as the starting point to offer a re-conceptualization of persona creation.

**Method:** A comprehensive review of the literature with a case study as an extended example provides insights into the necessity of updating how technical communicators create personas.

**Results:** The literature review exposes major gaps in the research about persona development that, when compared to the case study, shows the need for technical communicators to update the dimensions of how personas are created and to reclaim the emphasis on goals and purposes of the user's practice.

**Conclusion:** Technical communicators need to re-conceptualize the creation of personas by incorporating additional dimensions that create embodied personas for a mobile world and that reclaim and refocus the persona's emphasis on goals and purposes rather than simply a focus on audience. These changes allow technical communicators to meet the needs of users of complex information systems and, thereby, to contribute more meaningfully to user experience projects.

**Keywords:** Audience analysis, personas, prototyping, user experience

## Practitioner's Takeaway:

- Expands persona creation to include more embodied dimensions: culture (global and local), ability status, and emotion
- Incorporates mobility (e.g., smartphones) into persona creation
- Renews call for greater emphasis on goals of users rather than simply the user's task
- Re-conceptualizes personas to make them three-dimensional and more practical for complex information problems
- Provides a worksheet to incorporate the persona creation method developed

In a recent commentary, Tharon Howard (2015) wondered, “are personas really usable?” (p. 20). Howard acknowledged the past usefulness of the persona in user-centered design, but he then pointed to recent empirical work (Friess, 2013) that found designers rarely referred to the research-based personas as a tool on which to base decisions. Instead, the designers relied on their own opinions. Acknowledging the limitations of a single study, Howard does not specifically answer his own question about the usability of personas, but his skepticism “reminds us that we can’t become complacent in our use of [tools]” (p. 25). Howard’s challenge for technical communicators to not become complacent instigated my own re-examination of personas and their use.

Let’s start by defining personas as detailed descriptions of real people and users who technical communicators write for and designers design for. Personas help the project team stay focused on the needs and goals of the people who will use a product, service, or information. Howard’s commentary intersected with my own critical reflections on persona creation and use. Why was I thinking about personas? As a long-time advocate and user of personas on design projects of all kinds, I was reflecting on a consulting project where personas that we created using existing guidelines from the literature were not adequate to accurately convey the complexity of our users and their goals.

I was working with an American non-profit with around 110 employees. Over the previous two years, it had doubled in size in terms of resources, transactions, and employees. The non-profit provided a range of services to a tri-state area, and a large part of their work involved the distribution of a wide variety of donations. The organization had three distinct locations: the administrative office, the warehouse, and the customer center. I was asked to develop a knowledge management system for their employees that would include the selection of an appropriate content management system, to create an appropriate information architecture of main topics and sub-topics, to design an interface, and to develop a strategy for gathering information and writing the content that would populate the system. I would report to the executive vice-president responsible for day-to-day operations, and the primary team that I would work with included the chief financial officer, chief technology officer, managers from the warehouse and customer center, and a student team from the

local university who were working with the technology officer on information technology solutions by building custom applications.

With a substantial deliverable and a large, diverse, and distributed team, personas seemed to be the perfect solution to keep the entire team focused and keep our users in mind throughout the process. Based on a number of interviews (18 in all) that represented many of our target users, personas helped to bring together similar users, to create identities for different users not available for interviews, to represent some of the major goals the knowledge management system needed to incorporate, and, more importantly, to educate all team members on the different audiences.

What I determined during this project was that the existing studies on current practices of persona creation are limited and, as Howard argued, potentially not useful. For example, while it may be implicit in current heuristics that users are diverse and complex people, excessive reliance on basic demographic data such as age, gender, and ethnicity disembodies those people. Starting with practices that had worked, as found in any number of templates or heuristics that one can find in any number of resources in print or online (e.g., Nielsen et al., 2015), I then moved outward to account for the complexity of information and the user interactions with those complex systems and associated information. Thus, my aim was to re-conceptualize personas to account for this situation. To do that, I offer three modifications to the current way that technical communicators approach persona creation. First, personas must be embodied and become three-dimensional replications of real people with real bodies, problems, and emotions. Second, the persona must take into account the increased mobility of audiences. Third, the persona requires greater emphasis on the goal-orientation and purposes of users.

Howard was right to ask if personas are really usable, and in giving thoughtful consideration to his question, I have decided that the answer is, “yes,”—but only if technical communicators create them differently than they have in the past. Personas need to have a greater awareness of embodiment (e.g., to include the possibility of disabilities), to include explicit attention to mobility (to account for our increasingly mobile world), and to refocus attention to goals, purposes, and context. Adding additional criteria for persona creation means technical communicators are encouraged to consider the underlying meanings and reasoning of intended

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audiences. Also, updating persona creation in this way will make them more useful in traditional technical communication fields but also make them useful in other areas where technical communication and design are becoming increasingly important (e.g., healthcare).

### Situating the Current Discussion

Personas occupy an interesting place as a tool that has been discussed frequently and in detail by both academics and practitioners. Because personas bridge the theoretical with the practical, this section will discuss the literature written about personas from both viewpoints.

#### Definition and development of personas

First developed by Alan Cooper (1999) to help create usable software, personas have evolved and been adapted to be useful tools for a variety of products, applications, websites, and interactive systems. From Cooper's original description, others have elaborated on the idea in more comprehensive ways (e.g., Adlin & Priutt, 2010; Goodwin, 2009; Mulder & Zar, 2007). Personas provide the design or product team a way to envision users of their end product; they help to communicate key user requirements to all members of a project team; they provide a key orienting device throughout the project to keep members on the same page; they provide a useful way of communicating decisions to internal and external audiences; and they are a key component in helping to structure appropriate and usable interfaces, designs, and information. "Most technical communicators also see part of their role on a team as being the users' advocates" (Redish, 2010, p. 196), and, for a long time, this has meant advocating for those users through creating personas that can be used by design and development teams.

In general, personas should cover three basic areas (cf. Getto & St.Amant, p. 30):

- Who the audience is and what knowledge they have
- How they feel about the product, service, or information they will be using
- Why they would be using this thing
- More specifically, personas will typically include:
  - Name and other descriptive information
  - Motivation and needs
  - Scenarios of use
  - Behaviors

- Features of the product, service, or information and how they relate to the user's motivation
- Technology comfort level
- Personal background
- Photo that encapsulates these characteristics above and gives the persona a human face (summary of Brown, 2011, Chapter 2)

For a current and thorough overview and comparison of common templates, one need only look to Nielsen et al. (2015). They took 47 descriptions from 13 companies and the recommendations from 11 templates in the literature and created an overview of the content they found (see Table 1 on p. 48 of Nielsen et al.). This is an important work for technical communication because it brings together recommendations from a wide-ranging literature across multiple fields and disciplines. Even though they did not include templates or heuristics that may be known in the US (e.g., Redish, 2012), the global emphasis of this review makes it impressive and important work.

#### How personas are currently being used

Personas have long been used to guide the development of user interfaces (Cunningham, 2005; Lindgren et al., 2007). In this sense, user interface can mean websites as well as other types of online systems such as content management systems (Dharwada et al., 2007; Henderson, 2009), mobile systems (Hussain et al., 2009), children's websites (Hisanabe, 2009), education products (Ketamo et al., 2010), and even car design (Marshall et al., 2015). This work generally reports on case studies in the development of interfaces and the ways that personas were used in that work. While useful to the overall corpus of persona literature, it is not particularly useful for work by technical communicators since this work is mostly using personas as a limited heuristic rather than an integral part of designing the user experience.

Practitioners often publish in this area, and some recent and relevant work includes two general overviews about what they are, how to create them, and how they can be used (Bedford, 2015; Filippo, 2009); an explanation of why they are still needed in design (Edeker & Moorman, 2013); how they can be used successfully (Hart, 2011; O'Connor, 2011; Spool, 2005); and how to use them specifically in user experience design (Sauro, 2012; Young, 2016). These

are simply representative samples because a seemingly endless number of short articles, how-tos, case studies, tips, and techniques on personas can be found on the Internet. However, this sampling shows the vitality and continued use of personas as they are conceived for workplace use.

Important work in the field of computer human interaction (CHI) includes studies by Chang et al. (2008) and Matthews et al. (2012). Chang et al. discuss ways that practitioners actually use personas and conclude that “designers use personas in creative and flexible ways not always in line with the original intentions of personas” (p. 442), but since this was a short paper option for the proceedings of the CHI conference, the reader is left wondering what “not in line with the original intentions of personas” actually means. On the other hand, Matthews et al. (2012) provide information about actual use by practitioners by reporting on interviews they conducted with ten designers and four user experience professionals. The big takeaway from their study is that practitioners “do not use personas in their own design processes. Rather, they use personas mainly to communicate with others, to build support for a chosen design or more generally to advocate for user needs” (p. 1219). These two studies intersect with Erin Friess’ (2013, 2015) work, which was done in a technical communication context. Friess (2013) found that personas may not be a helpful tool for making decisions in design meetings. Though Friess was taking a rhetorical approach, her findings seem to contradict that of Matthews et al. when it comes to communication between practitioners on a project team. Friess’s conclusions do, however, support Matthews et al.’s and Chang et al.’s findings that personas are not necessarily used consistently during the design process.

Beyond Friess’ work, there has been only a handful of scholarly work in technical communication published in the last 15 years: a case study on evaluation of an interactive museum exhibit (Kitalong et al., 2009), two examinations from a pedagogical standpoint (Dayton, 2003, 2009), and connecting personas to Web design (Coney & Steehouder, 2000). The one work that holds the most promise in moving conversations on personas forward is a recent piece on global users. Getto and St.Amant (2014) have suggested that personas can be useful for addressing the needs of international users since they must be able to navigate online interfaces easily and successfully (St.Amant, 2005; Sun, 2012).

Getto and St.Amant offer technical communicators a useful starting place to update and re-conceive our approach to personas, which is discussed in more detail in the next section.

The purpose of a thorough summary of the existing literature is to illustrate that technical communicators can play a vital role in advancing both theoretical and practical knowledge about persona development. Currently, typical personas do not include all the aspects that would make them more realistic, richly described people. Including more details in persona development could potentially increase their usefulness in the design process. The next section details the three ways that I propose technical communicators should re-conceptualize the persona development process.

### Embodiment, Mobility, And Reclamation

When faced with trying to understand how to design and write for complex information systems, some of our familiar approaches come up short. For example, existing persona literature and templates do not fully account for users with disabilities nor do they consider localized cultural issues (such as regional variations in language use). Moreover, existing models for persona creation do not take into account the increasing mobility of users and what effect that has on design. Complex systems in this sense are systems that include multidimensional challenges of information content, environment, or technologies that are “embedded in our physical, social, and work environments” (Quesenberry, 2011, p. xiii). This was exactly the situation that I faced in the opening story. Trying to determine how best to design and write this type of system means that technical communicators need a complex audience analysis system because “naming the audience is not the same thing as understanding it” (Hailey, 2011, p. 33), and, more importantly, “complexity is not so much an attribute of a product or process itself as it is an attribute of the interaction between that product or process and its users. Thus, complexity is audience specific” (Redish, 2010, p. 199).

For technical communicators, personas and persona creation should be part of audience analysis for development and testing of the user experience. With the increasing complexity of systems, the need to understand audiences becomes even more important, though more difficult. Complex systems and complex knowledge



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work are not new to technical communication (Albers & Mazur, 2003; Albers & Still, 2011; Mirel, 2004). Further, “within a complex system, the individual elements have high levels of interaction and multiple feedback paths between each other, the user, and the environment” (Albers, 2011, p. 6), and, in many cases, complexity moves across work environments, technologies, topics, and information contexts (Quesenberry, 2011, p. xiv). In an era when the technical communicator should be seen as a problem solver in a knowledge worker environment, these complexities are normal occurrences being faced on the job.

So how can we address some of the issues of complexity from the opening project I described? After considering the problems from that project in light of complexity, I came to the conclusion that personas did not work on three levels:

- **Expansion:** The current limited approach to developing personas needs to be expanded to include embodied dimensions (such as disabilities and emotion).
- **Mobility:** Personas need to account for issues of mobility (e.g., the growing importance of mobile phones and other portable devices).
- **Reclamation:** Technical communicators need to reclaim and refocus the personas’ use on goals and purpose.

I discuss these three ideas in greater detail in the next three sections.

### Embodiment

In explaining why they wrote their book on “persona lifecycles,” Adlin and Pruitt (2010) claimed that even though people were excited about using personas, “no one had described, in practical terms, how to create” them (p. 2). Many of the resources that discuss ways to create personas accept the fact that assumptions about users, contexts, and use are embedded within the initial creation of personas. This is most likely caused by the fact that current templates and heuristics on persona development focus on the ideal user. Thus, the initial data-gathering phase needs to expand to include dimensions of culture, bodily ability, and emotion.

Getto and St.Amant (2014) have done some of the important work in moving technical communicators forward in re-conceptualizing how we develop personas

by insisting on adding a cultural component. They argue that existing scholarship does not adequately consider other cultures and global contexts and, as my literature review and the case study used as an example here suggests, they are absolutely right in this regard. They offered a heuristic that takes traditional persona development one step further and created a contextual map that includes four quadrants: local and technological, global and cultural, global and technological, and local and cultural. These quadrants, they posit, “identify four key contextual aspects/factors that can affect use in different cultural settings” (p. 34). The explanation and list of questions to get one started in this sort of analysis (pp. 34–36) offer technical communicators the first step toward expanding persona creation to include an overlooked component of local cultural dimensions.

The quadrant analysis offered by Getto and St.Amant (2014) for global audiences also works well in situations where local users may have different cultural backgrounds. For example, in the case study I described earlier, the project was located in Cincinnati, which means that it has an Appalachian (both rural and urban) culture, a Southern culture from those who live in Kentucky and commute into the city, and a Midwestern culture. Even though this borders on oversimplification, these local, cultural differences must be accounted for in persona creation. In addition, there are cultural differences within an organization, such as the difference between managers, technical support staff, and customer-service staff who work with donors and recipients of donations. In other words, what Getto and St.Amant could have stated more directly and more forcefully is that cultural considerations, both local and global, are a key audience characteristic that must be considered in any complex information project, and they are an important step in embodying the user.

Technical communicators need to also remember that users have a physical and psychological presence. As I have argued, technical communicators have “too long assumed an unproblematic and disembodied body” (Meloncon, 2013, p. 69), which means “technical communicators have made the ‘normal body’ the focus of the user-centered experience” (p. 75). This emphasis on the “normal” is problematic in two ways. First, since the US Census Bureau (2010) reports that roughly 19% of the population has a disability, and the World Health Organization (2015) estimates that 15% of the worldwide

population has some form of a disability. This means that a large number of users we may be designing for would not fit the “normal” parameters. Second, disability scholars have challenged this idea of normal in an effort to encourage a different view of people with disabilities.

The theoretical perspective from disability studies is helpful for technical communicators to think of their typically “normal users” in a different way. This is particularly important given that, in the US, the Americans with Disabilities Act (<http://www.ada.gov>) has recently celebrated its 26<sup>th</sup> anniversary and, in December, 2015, the European Accessibility Act ([http://europa.eu/rapid/press-release\\_IP-15-6147\\_en.htm](http://europa.eu/rapid/press-release_IP-15-6147_en.htm)) was passed.

Disability studies scholar Rosemarie Garland-Thompson (1997) coined a new word, *normate*, to “designate the social figure through which people can represent themselves as definitive human beings” (p. 8). According to Garland-Thompson, *normate* gives people with disabilities the power to step into the position of authority since they have more control over their own identity. For technical communicators, it provides an alternative viewpoint to “normal” and reminds us that we need to design beginning with accessibility in mind. As Slatin (2002) reminds us, “Accessibility is fundamentally a rhetorical issue, a matter of fleshing out (literally) our conception of audience to include an awareness that there are people with disabilities in that audience and developing effective skills and strategies for addressing the entire audience” (para. 37).

Since I’ve been reading theoretical work generated by scholars in disability studies, I’ve begun to realize the importance of bodies to technical communication. Users are often reduced to a one- or two-dimensional persona after performing a task analysis. In everyday acts and in everyday being, “the body and its specific behavior is where the power system stops being abstract and becomes material. The body is where it succeeds or fails, where it is acceded to or struggled against” (Fiske, 1992, p. 162). But if technical communicators begin to re-conceptualize personas as three-dimensional people with feelings, emotions, and bodies that may fall from the center of the bell curve, the field can expand the way we think of users and purposes in a way that is more inclusive and useful to complex projects.

Resources for persona creation have not adequately and consistently considered issues of accessibility. For example, Adlin and Pruitt’s (2010) book includes one page on this topic even though they had previously

acknowledged (Adlin & Pruitt, 2006) that their personas are limited by a failure to account for a full range of ability levels. While the Society for Technical Communication (STC) has a special interest group on accessibility, it only contributed one persona for the STC Body of Knowledge in 2008 (<http://www.stc-houston.org/stc-body-of-knowledge-the-age-50-persona/>), which was a limited view of accessibility and could not adequately prioritize the need to incorporate an awareness of disability and accessibility into persona design. As an example, let us return to the case study with which I began this paper. Levels of ability were paramount because several employees had physical disabilities that limited their ability to interact with the knowledge management system, such as color blindness and an impairment that reduced the user’s ability to consistently use a mouse. These access limitations were only discovered when we specifically asked questions about ability that would directly affect interface design decisions, even though some researchers (Halbach, 2010) and practitioners (Chisnell & Redish, 2005; Horton & Quesenberry, 2014) are moving toward creating personas that pay attention to disability and accessibility concerns. However, much more work needs to be done, and accessibility and disability must be included in the creation of personas. Particularly, personas need to focus on the abilities of the intended users.

If we are to embody users, technical communicators also need to ensure that they understand that the embodied users are complicated, affective beings with a range of emotions. Countering the historical formation that positions emotion as less than reason, Micciche (2007) argued that “emotion is part of what makes ideas adhere” (p. 6). It is this idea of taking emotion and using it as a productive leverage that not only is appealing but also useful to understanding the expansion of personas to include an affective dimension. To place affect in the forefront of discussions of persona creation is to ultimately create more innovative practices that adequately represent the users, their bodies, and their emotional states at the time of use.

Some practitioners, such as Aaron Walter (2011) and Geoff Hart (2011), have argued more broadly for the inclusion of emotion in design, and Alan Klement (2014) has made overtures toward integrating “anxieties and motivations” into the creation of personas (which Klement wants to replace with “characters”). Sara Wachter Boettcher (2016) goes as far as to say, “You

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also don't get to decide the state someone ought to be in when they use your service, or the feelings they ought to have along the way" (n.p.). These practitioner voices, when combined with theoretical voices from academia, illustrate the growing importance of accounting for emotion in the design process.

By thinking through the affective states of users, technical communicators are better positioned to design and deliver more usable products, services, and information. For example, in the opening case, thinking through affect and how users may be using the system, we realized that some of the customer service employees would be talking to clients who were particularly upset and facing some stressful situations. Listening to those types of stories all day can be an emotionally draining experience for the employees. By considering users in trying to solve the organization's communication problems, we realized that the customer service representatives needed shorter shifts when dealing with clients to enable them to process the emotional aspects of their job. By expanding the persona in an embodied way, we enabled the team to see this dimension and address this complex communication problem.

Critics of this proposed expansion will likely counter with the idea that personas are not meant to describe every possible user or use case of the system or product. Others (c.f., Cooper & Reimann, 2003) go as far as to construct a singular persona who represents the primary user of each interface because such personas are helpful for maintaining focus on the general, primary user. However, my answer to these critics would be: How do you know that your primary persona, the one who represents the general user, is not disabled? How can you tell whether they are stressed and not thinking clearly because of their situation at home or even on the job?

Technical communication involves people who have feelings. The information and knowledge that technical communicators work with is often mediated through technology. For people with disabilities and also those experiencing emotional distress, technology often enables mediation of their interaction with the world around them, including technical communication. And embodiment often means more to people with disabilities. They have often been forced to pay more attention to their bodies than is required of able-bodied people, and they are often prevented from succeeding by our failure to consider their needs. All this is to say that technological embodiments matter, and they matter

a great deal. Expanding persona creation to ensure that the process captures a more diverse and complex image of the user provides greater opportunities for technical communicators to move beyond idealized subjects who are expected to act in only one way. But, we have to do more than just embody the criteria used in the creation of personas. We have to make sure we are creating personas that account for the increasing mobility of users.

### Mobility

As of October 2014, 64% of US adults owned a smartphone, and as of January 2014, 32% of US adults owned an e-reader and 42% owned a tablet computer (Pew, 2014), which represent the latest reliable, large-scale data on use of these devices in the US. Users are mobile, which is an issue that will have considerable impact on the future of the field.

Technical communication scholarship, unfortunately, has not taken up the issue of mobility in any sustained way. The few scholarly approaches to this topic are several years old and are mostly confined to theoretical (de Souza e Silva & Frith, 2012; Swarts, 2006, 2007) and classroom practices (Kimme Hea, 2009). Though technical communication scholars have been slow to study mobility, it does not take much work to find scholarly approaches in other fields (e.g., Cresswell, 2010; Farman, 2012; Merriman et al., 2013; Urry, 2007). Much of this scholarship argues that movement is one of the defining features of contemporary life, and that various forms of mobility should be placed at the forefront of any cultural analysis (Coulter, vanHam, & Findlay, 2016). Mobility, thus, means taking into full account the environment or location where users will be using, sending, or viewing the product or information and the fact that this environment changes as the user moves. In a growing number of cases, that environment or location is mobile. From tablets to mobile phones to smart phones to netbooks, much of the information is delivered while the user is in constant motion. For example, in the opening case study, I was continuously struck by movement—from workers in the warehouse on mobile phones to iPads being carried to clients in the waiting area. The warehouse manager from the case study in which I opened this paper uses an iPad to log inventory, while members of the customer service team send text messages to clients as part of the intake system. Thus, mobility is encapsulating both physical movements

as well as movements enhanced by technologies and a combination of both.

Current personas tend to be static and stationary, which limits their ability to fully capture the modern lifestyle. The inclusion of mobility into the conception of what personas are and how they can be used ensures that they are being used in intra- and inter-contextual way. As Farman (2012) has demonstrated, mobility “is less about the devices and more about an activity” (p. 1). The usefulness of moving as a way of understanding user experience is negated if specific questions about users’ activities are not included in persona creation. Movements are direct practices and can connect the development of personas back to the need to create embodied personas. “Mobility is practiced, it is experienced, and it is embodied” (Cresswell, 2006, p. 3). In other words, we have to pay attention to how bodies move at and between locations and how bodies may be moving when using a product, service, or information.

Now that personas have been embodied in a mobile world, technical communicators should consider one additional change to existing persona development: reclaiming and refocusing personas on user goals and purposes.

### Reclamation

Personas have always been used as a tool to help in the audience analysis process. The increasing presence of complex systems and complex information has meant that these contexts need to be analyzed in new ways (Albers & Still, 2011). One way to address audience concerns as users of complex systems is to shift the emphasis away from the characteristics of the audience and to focus more specifically on what the users will be doing. This focus on doing allows a more sustained and deliberate focus on the user’s goals and moves technical communication beyond simply focusing on task analysis. Even though much of the persona literature focuses on what the user will be doing, it is often confined to limited task analysis or constrained use cases. What I am arguing for here is for technical communicators to reclaim and refocus persona creation on goals and purposes. One way to do a better job of accounting for differences in ability and issues of mobility would be to start by considering the requirements to use a product, service, or information and asking whether any potential users might fail to meet those requirements.

Let us return to the opening case study. The first area of the knowledge management system we addressed was the intake area. This is where all donations were logged into the main system and coded to include what type of donation it was. There were seven women who worked in this area (the users for whom we were developing personas), and they looked quite similar to us in terms of their user profiles. A typical persona would capture the fact that they all had the same basic skill levels on the technology; they had been with the company from 2–5 years; they had no specific cultural differences that impeded their use of the system; and they needed to interact with the system in similar ways. However, what we discovered was that they were indeed not interacting with the system in similar ways. They had developed their own system for distribution of work. For example, on any given day, four of them may log in donations (including who donated it, where it came from, and what it contained), while two others would then process all the internal coding and meta-information, and the last would check for errors before formally entering the information in the system. Thus, they had begun to differentiate tasks, which meant that on any given day users interacted with the system differently. Without reclaiming an emphasis on goal and purpose, this sort of detail would have been lost.

Even though existing persona heuristics and templates often ask for a task analysis or development of use cases, what I am advocating for here is a more involved and more nuanced consideration of purpose. The women had adapted to the complex system in ways that were outside of the norms but, in fact, made the system more useful for their day-to-day jobs. What this means for technical communicators faced with complex user experience analysis is that we have to consider the multiple ways a system can be used even in a seemingly homogenous context and account for those ways within the persona development process.

Here is another example from the same organization. The organization hosts a large fundraiser every year. This fundraiser is responsible for funding more than 50% of their annual operating budget. One woman is in charge of a master spreadsheet that houses all of the people who have contributed to the campaign. Information for this spreadsheet comes in from a variety of sources: mail, online donations through the website, small events held throughout town to market and promote the actual event (credit card, cash, and check



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transactions), and local organizations who help with marketing. This is a record-keeping nightmare in some ways since none of the process other than the online payments is automated, and even the online payments have to be copied into the master spreadsheet. Thus the woman who is in charge of the spreadsheet is constantly having to check and double-check her entries against a number of other forms that come to her a variety of formats. Trying to capture the “use case” for her job and how it needed to be automated into the new complex system that was being built depended not on her *per se* but on the multiple purposes of her job. Her job could not be captured through task analysis alone, because it involved a complex network of tasks that were fluid and ever-changing. Being able to shift the focus from simply audience analysis and task use to a consideration of her multiple and dynamic purposes that a new system would need to meet helped guide the design of the complex information system. The idea of reclamation reminds technical communicators to focus on broader purposes and goals when developing personas. By not limiting considerations of goals to a simple task analysis or use case, we are better positioned to capture the complexity involved in the goals and purposes of information systems.

I have put forth the idea of adding an embodied and mobile dimension to persona development, as well as a re-conceptualization of the full spectrum of a user's purposes. In that context, the question now becomes: What are the full implications of these proposals in practice? The answer to that question is discussed in the next section.

### Implications

In their current state, the usefulness of personas is limited because they lack necessary dimensions (embodiment and mobility) and, as importantly, the emphasis on goals and purposes needs to be reclaimed and more explicitly emphasized. While it is possibly true that many experienced technical communicators may already be integrating these proposed changes in their daily practice, it is important to the development of the field to articulate changes to practice that will explicitly advance the field's knowledge. In my own work, I was able to come to these conclusions when I was forced to adapt existing persona practices to address the complexity of a knowledge management project and

then to work toward articulating not only what I had done but also why it was important.

Overall, the benefits of the proposed reconceptualization of persona development include that it

- advocates for a wide variety of users
- addresses concerns of emotions and affect in design
- considers accessibility
- provides a user-centered focus for the entire team
- expands the traditional problem-solution dyad into a three-dimensional model in which where actual users (and their bodies) are not forgotten, and
- connects all decisions to the overall goals of the project.

This reconceptualization of the persona development process will afford technical communicators additional language to make business cases for persona development or interface changes within their organizations because “personas are predicated upon the idea that designers require some sort of detailed description of a person, rather than just a body of ‘users’ . . . personas . . . can be invoked to reduce conflict or win certain political disputes within the design team” (Massanari, 2010, p. 411).

Moreover, when this case study is placed alongside the existing persona literature, there are several implications for both theory and practice. First, persona development is useful to do during and after the interview process because it is the best way to get realistic and relevant personas that can be shared with the entire project team. In the case study described here, the personas that we developed were based on a series of interviews and observations, but incorporating an emphasis on embodiment, mobility, and goals and purposes should become a primary focus even when technical communicators are unable to interview potential users. My proposed enhancements to the persona creation method will make the approach more suitable for situations in which the problem is ill-defined, because persona development involves multiple scenarios that should encompass most of the arenas of the problem and should also encompass situations in which projects require additional characteristics, such as disability, of audience analysis.

Secondly, the re-conceptualization that I have proposed answers critics' concerns that say personas may not be effective in actual design situations (e.g., Friess, 2013). The tool is only useful if those who

developed personas are actually using it fully, so it is probable that the reconceptualization of personas that I have put forward may fail in the same ways existing personas fail. We have known (e.g., Adlin & Pruitt, 2010; Goodwin, 2009) that one reason personas fail is that “the personas were not credible and not associated with methodological rigor and data” (Adlin & Pruitt, 2010, p. 2). Matthews et al. (2012) reported that the practitioners in their study did not use personas because they were too abstract, impersonal, misleading, and distracting. Including dimensions of embodiment and mobility have the potential to mitigate these problems.

Third, adding an embodied dimension accounts for the users physical and mental abilities, and accounting for their emotional state makes users more real and more plausible, which can potentially offset the criticism of stereotyping (e.g., Turner & Turner, 2011). Also, by adding more emphasis on the purpose of the complex system and then incorporating the mobile dimension, technical communicators can incorporate a more realistic use scenario in which embodied personas affect how users use and interact with complex systems.

Fourth, traditional persona creation cannot adequately take into account shifts in purpose or goal-orientation, which are typically dictated by organizational and structural factors, such as the changing of policies and procedures or the personality of managers. This was a point made recently by St. Peter (2015), as she described the failure of a communication project in an intercultural context. St. Peter notes, “as a user-focused tool, personas do not address—or even necessarily represent—these structural issues” (p. 25). However, creating personas that reclaim the emphasis on goals and purposes can mitigate the structural problems of changing policies or changing leadership that she notes. With an emphasis on goals, the persona can be easily updated if there are major changes during the project. Moreover, matching the reclamation on goals and purposes with issues of mobility could have solved part of the problem found in St. Peter’s case study. In that project, which was field-based, the team did not adequately capture in the persona the need for users to have to travel to the site. Had the team included mobility as a key question in their initial persona creation, it is possible that the project could have had a different end.

Beyond addressing some of the direct criticisms in the literature, another implication is that enhancing personas gives technical communicators opportunities to improve user experience design by adding value

beyond simply stating whether something is usable. “The technical communicator is the person in the development process who focuses on the end user. Technical communicators see themselves as the user’s advocate. And, traditionally, it is the technical communicator who shoulders the responsibility of making sense of a confusing or complex feature or interface” (Redish & Barnum, 2011, p. 95). Usability and technical communication have always been a combined role. Thus, technical communicators need to intercede and use their audience analysis skills to craft multi-dimensional, embodied personas.

The sixth implication of re-conceptualizing personas is being able to open up roles for technical communicators in new areas—outside of design-centric fields and software settings. One of the areas where personas are being used much more is in the area of health care. Peter Jones (2013), in his book *Design for Care*, advocates for the use of personas (see Chapter 3), and recent health-related studies (e.g., Hensely-Schinkinger et al., 2015; Phillips, 2016; Serio, 2015) used personas as a way to better understand patient populations. This new conception of personas has the potential to advance efforts in health care settings, particularly in the area of patient experience design (Meloncon, 2016). Being able to understand patients and their contexts through the creation of personas affords health care professionals with a better opportunity to improve patient care in more personalized and potentially effective ways. If one creates rich, detailed personas that embody users and account for their emotions, then any project—no matter what type—will benefit from the ability of personas to help define the problem, direct ways to find solutions to the problems, and keep the entire team focused and on track.

Finally, the last implication is in future directions for research. Though the changes to persona development that I have proposed were directly influenced by changes I needed to make on a specific project, my literature review suggests that more research is needed to support efforts such as mine. The single case study presented here needs to be supported by research done at other sites and in other situations, which can lead to research findings that potentially affect the theory and practice of persona development. Additional research could also specifically look into better defining the disadvantages of personas by using empirical studies, such as the one Friess (2013) completed.

## Embodied Personas for a Mobile World

### Conclusion

Returning to where we started, Howard's (2015) recent criticism of personas was valuable because it started a dialogue about a popular but unproven tool of technical communication. If technical communicators want to continue to add value in their organizations, then it requires us to regularly reconsider and update some of our long-standing practices to ensure that these practices are really helping us to meet the needs of users, clients, employers, and organizations. In the case of personas, technical communicators have long used this tool in a limited capacity, and the time is overdue for us to re-conceptualize what a persona is and how it is can be used to improve the value of our work.

Personas must be embodied with considerations given to the limitations of those bodies through disabilities or temporary inaccessibility (e.g., due to the emotions evoked by stress), while also remembering the affective dimensions of users at all times. Moreover, in our increasingly mobile world, personas must be able to move as a way to consider issues of mobility and how users may use a product, information or service while on the move with mobile devices (such as mobile phones or tablets). Finally, for too long, personas have been used solely focused as an audience analysis tool, but with the growing complexities of systems and information, we need to think of personas as a way to understand the user's purposes and actions.

Persona creation should not be about a checklist or about ensuring that different characteristics are included. Rather, persona creation involves overlapping concepts and ideas that lead to three-dimensional representations of users who have bodies and who move for specific purposes. Until the day comes that incorporating actual users into the design process is an everyday occurrence, the enhanced persona development proposed in this paper provides technical communicators and other members of the project team with a more flexible and adaptable tool that helps us to design a wide variety of tools, applications, and information to better to meet the needs of its users.

Note: This project was a case study and as such was not "human subjects research." However, as a condition of the work I did with the company, I have intentionally kept the details generic so the organization, its employees and clients cannot be identified.

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## Embodied Personas for a Mobile World

### Persona Creation Starter Guide

#### Project and Organizational Goals

Clearly state what the purpose and goals are for the product, information, or service. This statement helps to focus the project team on larger organizational and business goals and provides a reference point for each persona that is developed.

**Photo Here**

#### Persona Development

Personas are based on research. The type and kind of research conducted varies according to organizations and projects. Doing surveys, interviews, or focus groups with real people who might use your product, information, or service is always the most desirable. If that is not possible, then market research, analytics, or published research is the best place to start.

#### Name

Helps to personalize the process. Keep in mind that a single persona represents a group of people that you want to use your product, information, or service.

#### Summary/Quote

Captures who this persona represents and what the end goals are.

#### Personal characteristics

- What does the persona already know about the product, service, or information?
- What is the persona's comfort level with the product, service or information?
- What demographic information is relevant for the product, service, or information? (Not all demographics have a bearing on all situations; only include relevant demographics in the persona creation based on the overall goals.)
- What educational levels and background knowledge are relevant for the product, service, or information?
- What tasks is the persona being asked to perform with the product, service or information? How do personal characteristics affect the performance of those tasks?
- What cultural considerations (such as language and ethnicity) should be made for the persona? What considerations regarding organizational culture should be made for the persona?

#### Embodied characteristics

- How might the persona's disabilities (or abilities) affect use of the product, service, or information? For example, does the persona have a specific physical limitation that would affect the design of the interface or a mental limitation that would mean more specific attention to language choices and information design?
- What design considerations are necessary to accommodate the persona's emotional states? For example, based on past experiences or personal experiences, will the persona enter the experience in an emotional state of anger, disappointment, or success?
- What, if any, other considerations of the persona's real body and emotions should be considered? For example, is the persona tired, overly busy, rushed, or distracted?
- How does the persona's embodied characteristics affect performance of the required tasks?
- What motivates the persona to consider using the product, service, or information?

**Mobility**

- Where might the persona be located while using the product, service, or information? What characteristics of that environment affect performance of the required tasks (such as noise, bad lighting, etc.)?
- Will the persona be using the product, service, or information on a mobile or portable device (such as a smart phone or tablet)?
- What, if any, other mobility-related issues need to be considered?

**Goal orientation**

- What would motivate the persona to use the product, service, or information? For example, what are the motivations behind the primary goal identified in the persona summary?
- What support does the persona need from the product, service, or information in light of personal and embodied characteristics?
- What challenges (personal, embodied, mobile) must be considered to enhance the persona's ability to reach the goal?
- How do the persona's goals match the overall purpose for the product, service, or information as set forth by the client or organization?

**Ethical Considerations**

- Does the persona capture the humanity of the individuals represented?
- Does the persona cultivate respect for the human dignity of the individuals represented?
- Does the persona avoid exploiting the frailties (ignorance, prejudices, etc.) of the individuals represented?

*\*Incorporates the ideas presented in Embodied Personas for a Mobile World, Technical Communication, Volume 64, Number 1, February 2017, with adapted concepts from Chapter 2 of Dan Brown, Communicating Design Communicating design: Developing web site documentation for design and planning (Second ed.). Berkeley, CA: New Riders.*

Jackie Damrau, Editor

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## The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution

Walter Isaacson. 2014. New York, NY: Simon & Schuster. [ISBN 978-1-4767-0869-0. 542 pages, including index. US\$35.00.]



In 1843, Ada Lovelace, mathematician and daughter of Lord Byron, while working with Charles Babbage on an early attempt to build a mechanical calculator, envisioned the eventual existence of what we now call a computer, a universal programmable machine capable of taking on any task.

As it turned out, making Ada's vision manifest took more than a hundred years and the collaborative contributions of dozens of mathematicians, physicists, mechanical and electrical engineers, materials scientists, mechanics, and visionaries. Exploiting the possibilities the computer opened up—the Internet and the rest—took the contributions of many others, including a motley assortment of entrepreneurs, gamers, hackers, and social visionaries. In *The Innovators: How a Group of Hackers, Geniuses, and Geeks Created the Digital Revolution*, Walter Isaacson tells their story.

Isaacson has written a number of well-received books, including biographies of Benjamin Franklin, Albert Einstein, and Steve Jobs.

It is a long, complex, and compelling story, a tale of daunting scientific challenges and the exceptional people who chose to face them. Isaacson tells it well, providing relevant biographical information to keep the narrative and human-interest aspects high while also providing clear explanations of the technical issues.

While covering the major events and well-known players, Isaacson also tells the stories of those who contributed greatly but who have gone largely unsung. For example, he points out the important role women played in the development of programming. During the creation of ENIAC, one of the first successful computers, male engineers focused solely on building the hardware. To test the machine, a group of women were given the supporting role of feeding it data and instructions. Left to figure out how to make the computer efficiently solve actual problems, the women devised the concepts

of master programs, sub-routines, and many of the foundational elements of modern programming. As it turned out, the programming side of computer science became every bit as important as the hardware itself.

While the narrative is clear, engrossing, and entertaining in its own right, there are also important lessons to be gleaned about how innovation actually works in the real world. Contrary to the trope of the lone genius getting a bolt from the blue, almost all the important work was done through collaboration and the cross-pollination of ideas. It seems that when people with different personalities and areas of expertise freely share ideas—not just in worksite teams but also across disciplines, organizations, and even centuries—ideas are tried out, discoveries are made, innovation takes place, and we all benefit.

Whether you are just looking for a good story well told, or making a serious attempt to understand how the modern digital world came about, *The Innovators* should meet your needs.

### Patrick Lufkin

Patrick Lufkin is an STC Associate Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

## Draw Your Big Idea: The Ultimate Creativity Tool for Turning Thoughts Into Action and Dreams Into Reality!

Nora Herting and Heather Willems. 2016. San Francisco, CA: Chronicle Books. [ISBN 978-1-4521-5292-9. 174 pages. US\$19.95 (softcover).]



When was the last time you took out a pencil and sketched something? When was the last time you doodled in a meeting? Or, during a lecture?

*Draw Your Big Idea: The Ultimate Creativity Tool for Turning Thoughts Into Action and*



*Dreams Into Reality!* authors, Nora Herting and Heather Willems, state that “drawing out your ideas leads to a deeper understanding of a problem and faster decision-making” (p. 12). They sold me hands-down on the value of drawing. I tried their drawing exercise, 5 Simple Drawing Elements (p. 16), and didn’t expect to come away with anything more than a simple drawing. I chose to draw the clock on my desk, which our company presented to each employee 15 years ago. I have used my clock daily to check the time. However, as I drew the details of the clock with its Roman numerals, I was shocked to discover the number 4 was actually written as “IIII” on the clock face instead of “IV”! Had I not drawn the details, I would have continued to overlook this. I asked my fellow co-workers, who also received a company clock at the same time as me, and they, too, never noticed the “IIII.”

When I presented my discovery to my manager, she instantly saw the value of drawing. Now, our entire writing team is learning to incorporate drawing not only in everyday sketches, but we’re now developing a library of icons that we can use in our technical documentation and courseware.

*Draw Your Big Idea* opens with the case for visual thinking and modeling. Herting and Willems then describe the advantages of why you should draw. The book contains 100 drawing exercises for such things as discovering your passion, declaring your purpose, identifying your idea, picturing your customer, sharing your message, and charting your path. These exercises will help you sharpen your vision and brainstorm better.

On a personal level, I particularly liked tracking my day using a pie chart (p. 154), mapping my environment (pp. 98–101), and mapping my network (pp. 102–105). Two exercises, My Customers (pp. 118–119) and A Day in the Life (pp. 120–121), are useful for better understanding customers.

As a writing team, we used the Charting a Path exercise (pp. 168–169) to map out our next project. The path begins by identifying the strengths, skills, and resources to be gathered along the way to reach the big goal. Along the way are set milestones that must be passed. Having a visual where we could log these streamlined our planning, as it enabled our team to keep focused on the big goal.

I encourage you to read *Draw Your Big Idea* and start sketching. You will discover details in things you have

never before noticed. Also, during your next meeting, pick up a pencil and start doodling. You will find yourself absorbing more of what is being presented.

### Rhonda Lunemann

Rhonda Lunemann is a technical writer with Siemens PLM Software and is a senior member of STC’s Twin Cities Chapter. She also participates in a local writers’ group, Write Now!.

## The Vignelli Canon

Massimo Vignelli. 2015. Zurich, Switzerland: Lars Muller. [ISBN 978-3-03778-225-5. 110 pages. US\$20.00 (softcover).]



*The Vignelli Canon*—written by Massimo Vignelli (1931–2014), one of the ultimate graphic design legends—was completed shortly before his untimely death in 2014. The book offers great insight into this pioneering designer’s methods and approach to modernism in design. It is a fairly short book, yet

it is dense in content. While it could probably take about two hours to read it cover-to-cover, it might take longer to digest the information and even require rereading and reflection. I highly recommend this book for students and design educators as well as for professionals seeking inspiration and motivation.

In the introduction, Vignelli states that his basis for creating the book was for it to serve as a “useful instrument for a better understanding of typography in Graphic Design” (p. 4). He claims to have seen a decline in typographic standards and laments that the education of today’s student is lacking in this area. And while the book does an excellent job of sharing and expressing Vignelli’s beliefs and standards of typography, *The Vignelli Canon* also provides insight into the process, beliefs, and standards from a pioneer of the Modernist movement in America.

*The Vignelli Canon* is a collection of short essays on the author’s own theories covering design processes and practices. He breaks the book into two parts: The Intangibles and The Tangibles, which are essentially his

ideas on design theory and application, respectively. Within The Intangibles section, Vignelli offers his insight on various topics including the value of design history, theory, and criticism as well as discipline, appropriateness, and responsibility. All while The Tangibles side explains his dictums on grids, typefaces, scale, type relationships, and layout. Lastly, the text also contains many gems that reflect Vignelli's genius, which readers can quote or use for direct inspiration, such as "In a world where everybody screams, silence is noticeable. White space provides the silence. That is the essence of our typography" (p.86) and "Good design is never boring, only bad design is" (p. 69). *The Vignelli Canon* is quite broad in content and includes information that most people might overlook when creating a design; such as taking into consideration the space that the viewers thumbs encompass when holding a book, and adjusting the margins accordingly in your design.

Despite his claims otherwise, the text is a bit dogmatic in its approach to modernism and its strict formula for good typography. However, most readers will be able to see past Vignelli's rules and delight in his efforts to share his doctrine with the design community. His continual use of the word "we" within the text is a reminder that the book outlines the Vignelli approach, put forth by Massimo and Leila Vignelli, and is not something in which all designers must adhere. Readers will be able to directly apply the information to their own designs or reflect on how that information influences their own designs.

### Amanda Horton

Amanda Horton holds an MFA in Design and currently teaches graduate and undergraduate courses at the University of Central Oklahoma in the areas of design technology, design studio and history of graphic design. She serves as a book reviewer for Technical Communication.

## Technique in Nonfiction: The Tools of the Trade

Steven Darian. 2016. Ronkonkoma, NY: Linus Learning. [ISBN 978-1-60797-571-7. 272 pages, including index. US\$24.00 (softcover).]



How does a writer tantalize students and non-motivated audiences into reading non-fiction—whether it is served up in textbooks, journal articles, or trade books? Steve Darian, college professor and author of a dozen non-fiction books, recommends employing techniques and strategies used by successful fiction authors.

As professionals, technical communicators will already be familiar with the meaty portions of this book's ten parts and chapters. Plus, there are scrumptious tidbits hiding within unlikely chapters with Verbs, Nouns, and Adjectives in their titles.

Darian correctly begins *Technique in Nonfiction: The Tools of the Trade* with the reader. No matter what knowledge we are trying to impart, he says that communication is the attempt to build a relationship. We want to intrigue or inspire without drowning the reader in information. Identifying our audience—primary and any secondary—keeps the message direct and simple while making the writer more approachable.

Communication tips offered: use a signature format for a given field, find something interesting to say, use humor, and appeal to the reader's senses.

Parts 3 through 5 are as close to grammar as the author gets. In this quick-reference laden with examples, Darian informs us that verbs activate the nervous system which controls movements depicted by the verb. And he suggests ways to use flexible nouns in the role of verb or adjective.

Sentence and paragraph structure along with punctuation pointers may be the writer's bread and butter, but how many know that there are strong, medium, and weak punctuation choices? Stronger punctuation is typically reserved for presenting a long, complex, or difficult series of items.

Parts 6, 7, and 9 are a bonus for writers new to preparing a trade or textbook for publication. Anyone who reads fiction should know how to use openings and

closings to tie up loose ends. But how many technical communicators were ever instructed in handling titles, headings, summaries, citing sources, or navigation tools such as table of contents?

In Part 8, *Some Writers' Techniques*, Darian sends us to scout out and adapt rhythm and alliteration from poetry and other writing styles. He also admonishes that we must provide examples so the reader doesn't have to. Following his own advice, the author illustrates every chapter with multiple examples drawn from periodicals, books, and manuscripts.

Part 10 explains the revision process, a topic again suitable to the novice author. For the pros, Darian excites our taste buds one last time with an explanation of how non-fiction does indeed employ plots. Known as themes, these can pull together all ingredients to create a written feast.

*Technique in Nonfiction* is geared toward the trade and textbook markets, with a Student book available online. Use of numerous examples is perfect for a textbook—a bit repetitive for the trade market. The table of contents is exhaustive. The index is underwhelming, especially with page numbering off.

### Donna Ford

Donna Ford has been an STC member, joining in 1990 and serving on her local chapter's board for many years. She has been a technical writer since 1987 in the hardware, software, and government healthcare industries. Donna holds a certificate in Information Design from Bentley College. She also reviews books online for the US Review of Books.

## Free Agent: The Independent Professional's Roadmap to Self-Employment Success

Katy Tynan. 2015. Boca Raton, FL: CRC Press. [ISBN 978-1-4822-5881-3. 162 pages, including index. US\$35.95 (softcover).]



*Free Agent: The Independent Professional's Roadmap to Self-Employment Success* gave me an easy-to-read roadmap for preparing to work for myself. This book provides insight about the changing workplace, the necessities to start freelancing, and strategies for long-term success.

Tynan begins by explaining the evolving business climate. Immediately before the 2008 Great Recession, many companies reduced their full-time workforce. They switched to contractors and continued operating this way after the economy improved.

The second section conversationally outlines how to successfully start freelancing. “[T]he very best thing you can do for yourself is to spend some time developing a clear and specific understanding of how you create unique value for your customers” (p. 108). Tynan addresses transitioning from employee to self-employed and figuring out your cash flow. She says the first things you need are a name, structure, and bank account. She encourages budgeting for a lawyer, accountant, and insurance agent. Use their expertise to verify that you are meeting IRS guidelines and are prepared for unexpected problems. Understanding these operating costs will help you calculate your rate. Tynan recommends building a cushion into that rate for unexpected expenses and slowdowns.

In regard to finding customers, Tynan advises that you mine your current contacts, including previous employers. She stresses the importance of networking: Rather than trying to meet everyone at a networking event, look for two people that you genuinely like. Then, figure out how to help their business—even if it does not generate any immediate business for you, which helps to build a solid network that will support future growth. When you find a potential client, consider a thorough evaluation of their needs, then address those needs in your pitch. Create a statement of work that outlines exactly what you will do for what price to protect yourself from scope creep. If the customer asks

for more work, you have a basis to start discussing what has to fall off the deliverable list or how much more time and money the additional requirement will cost.

Tynan focuses the last section on avoiding burnout and growing your business. She advises that free agents build “a balanced life so that you don’t feel like a slave to your clients” (p. 95) and connect with other independent professionals to partake in the social interactions many freelancers forgo.

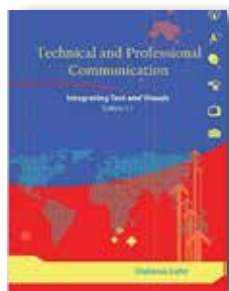
Tynan’s book outlines a great starting point for freelancers to prepare their business plans and begin budgeting their expenses. She encourages freelancers to network with other freelancers and invest in training. *Free Agent* checks some of those boxes—it’s not in-person networking, but it can give you some insight from someone who has tackled similar challenges. The real value in this book came in her detailed roadmap for starting a business that included stellar explanations about planning for taxes, establishing client expectations, and defining your goals for an independent career.

### Stephanie Saylor

Stephanie Saylor is an STC member and a technical writer at Next Century Corporation. She received her master’s degree in digital communication from Johns Hopkins University. Stephanie is a plain language enthusiast, working mom, advocate for food allergy awareness, and tweets @plainlang.

## Technical and Professional Communication: Integrating Text and Visuals

Dolores Lehr. 2015. Edition 1.1. Indianapolis, Indiana: Hackett Publishing Company. [ISBN 978-1-58510-793-3. 212 pages, including index. US\$36.95 (softcover).]



*Technical and Professional Communication: Integrating Text and Visuals* is a college textbook designed to introduce written communication skills to aspiring writers. While you may consider yourself well past your college years, every technical communicator will find something of value in this

book. Any technical writer can learn something from *Technical and Professional Communication*, whether it is learning new ways to format your résumés, to giving oral presentations, to brushing up on grammar.

Lehr uses her book as a model for the ideas she is promoting. For example, key concepts to effective communication are organization and presentation, which this book exemplifies. It is broken into thematic sections, such as “Integrating Text and Graphics” with each section containing several chapters. The chapters cover specific topics, such as “Reports,” “Using Tables, Color, and Figures,” and “Common Grammatical Errors.” Each chapter consistently uses tiered headings to break the content into easily digested pieces. Unsurprisingly, throughout the book effective illustrations demonstrate ways to best implement illustrations in various types of documentation. Concluding each chapter are a checklist and a set of exercises. The checklist helps you determine if you have grasped the primary concepts described in the chapter, such as “do you know how to label appendixes?” The exercises are more in-depth, such as asking you to list the advantages and disadvantages of including an objective on your résumé. At the end are a few appendixes that serve as useful references for all writers. For example, if you can never remember whether to write “8” or “eight,” the appendixes will guide you. Reading through the book is smooth and easy but also thought-provoking at times when you stop to consider certain concepts.

Overall, *Technical and Professional Communication* provides a great overview of the technical communication basics. The book follows its own advice for structure, layout, and design. Each section contains multiple visual examples so you can easily look up how to compose correspondence ranging from an email to sample résumé. It can also serve as a reference guide for common editing questions, such as rules for punctuation or how to use different citation styles. I recommend this book to anyone looking to learn technical communication and to anyone who is already in the field and looking to refresh or update their skills.

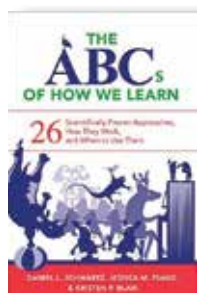
### Timothy Esposito

Timothy Esposito is an STC Associate Fellow with over 15 years of technical communication experience. He is currently president of the STC Philadelphia Metro Chapter. Before becoming president, Timothy was chapter vice president, treasurer, webmaster, and scholarship manager.



## The ABCs of How We Learn: 26 Scientifically Proven Approaches, How They Work, and When to Use Them

Daniel L. Schwartz, Jessica M. Tsang, and Kristen P. Blair. 2016. New York, NY: W.W. Norton & Company. [ISBN 978-0-393-70926-1. 368 pages, including index. US\$24.95 (softcover).]



Overall, *The ABCs of How We Learn: 26 Scientifically Proven Approaches, How They Work, and When to Use Them* is an excellent text that is useful as both a reference text for working educators frustrated with teaching problems and an introduction for new educators to 26 teaching tools, methods, and concepts. Chapters are

organized in a consistent manner with each chapter running not more than 12 pages. Enhanced by the accessible writing style and pragmatic goal, “The purpose of this book is to help people understand learning and to creatively develop methods of instruction suited to their learning goals, whether for themselves or another” (p. xiv), this makes for a book with useful chapters. Each chapter ends with a one-page summary that reminds readers about key concepts or helps potential readers. Of interest to graduate students or faculty: Each chapter also has a short list of referenced works.

The book’s cover is gimmicky and weak, and it makes the book appear self-published and poorly designed. After reading the book, it’s clear that each animal on the cover matches with one of the 26 letters of the alphabet. Before reviewing the book, the animals’ relevance is not clear. This is unfortunate and surprising, especially since all three authors work and teach at the Stanford University Graduate School of Education, and the book has praise from a Nobel Laureate who also works at Stanford. The cover neither conveys nor indicates the levels of experience or skill the authors bring to the text. The cover also fails to affirm the high caliber content it advertises.

Besides consistently solid chapters, *The ABCs of How We Learn* is well-organized. The Problem-Focused Index on pages 349–350 presents alphabetically organized problems that teachers may likely face and then the appropriate chapters are indicated to the right. This Index, while useful, should have appeared at the front of

book so that readers considering the book and seeking solutions could find what they need. The volume was useful in providing specific, trouble-shooting approaches for challenges I face in my online classrooms. While the book appears grounded in face-to-face teaching, it is useful for both face-to-face and online educators.

One perk: When most chapters review a concept, they ask “Can people learn to teach themselves with Concept X.” A second perk is that this text lends itself to be a source for education teachers or instructional designers seeking specific chapters, or chapter summaries, to share key concepts with students, colleagues, or new faculty in training.

Worth the money, but the book needs a new cover.

### Gregory Zobel

Gregory Zobel is an assistant professor of Educational Technology at Western Oregon University.

## The Elements of Blogging: Expanding the Conversation of Journalism

Mark Leccese and Jerry Lanson. 2016. Focal Press. [ISBN: 978-1-138-02154-9. 270 pages, including index. US\$34.95 (softcover).]



Each with a background in blogging and teaching journalism, authors Mark Leccese and Jerry Lanson give a big picture look at blogging in the context of traditional writing and journalism. *The Elements of Blogging: Expanding the Conversation of Journalism* could

be helpful to someone starting out in blogging or for a teacher looking for a good textbook. The approach is, in general, scholarly and thoughtful.

Examples appear throughout *The Elements of Blogging* to show how the authors grew their following, and a little appears about how to monetize and/or grow revenue for a blog. The focus is on how to find a voice, write an effective headline, build an argument, and find a niche and audience. Exercises and discussion questions also appear in each chapter.



Doing a good job of explaining that blogs primarily either report information or give opinions, the authors cover topics such as news, op-ed pieces, politics, art, food, and travel. As an example of how the authors approach their topic, they write that “many serious bloggers do independent reporting, consult and link to primary sources, verify facts, and maintain high ethical standards, just as professional journalists do” (p. 21). The Huffington Post is an example of such serious blogging.

Other examples that appear throughout give an in-depth look at success. Talia Ralph has a success story as she notes, “Blogs work best when readers are responding not just to the topic, but to the person writing” (p. 71) and explains about her postings as they reflect her interest in food studies and how she “lives in the world of food blogging” (p. 72).

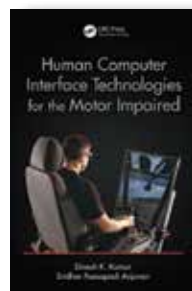
The <http://www.theelementsofblogging.com> site is worth a visit as it gives you an idea of the authors’ interests and style. It covers topics such as academia, arts, headlines, interviewing, literature, media, news, politics, reviewing, and travel. For example, one posting is about why those in academia should blog. You get a wider audience. It’s quick. It provides an informal format for discussion. This leads me to ask if and how we in our communities would benefit from this media and communication form.

### Jeanette Evans

Jeanette Evans is an STC Associate Fellow and active in the NEO community, currently serving on the newsletter committee. She holds an MS in technical communication management from Mercer University and most recently published an article, “Emerging Technologies: Where We Have Been and Where We Are Going” in STC’s Intercom magazine.

## Human Computer Interface Technologies for the Motor Impaired

Dinesh K. Kumar and Sridhar Poosapadi Arjunan. 2016. Boca Raton, FL: CRC Press. [ISBN: 978-1-4822-6266-7. 186 pages, including index. US\$89.95.]



*Human-Computer Interface Technologies for the Motor Impaired* focuses on establishing an important dialogue among scientists and engineers, clinicians, caretakers, and customers about the existing technologies for the disabled. This book contains 10 chapters that catalogue and discuss in great detail

human-computer interfaces (HCIs) available for people with injuries, diseases, and weaknesses due to aging. Kumar and Arjunan state that their purpose in writing this book is to help provide a platform for stakeholders to interact and improve on the technologies.

The authors synthesize their painstaking research around the interface devices based on currently available modalities, such as video, speech, mechanical, electrooculogram, and brain waves, etc. Their clear, concise, and accessible writing style provides a helpful overview of the history, variations in each type of technology on the market, and projected direction in research and enhancement of the devices.

In addition, Kumar and Arjunan’s sensitivity and consideration for users manifest itself in a careful analysis of possible benefits, limitations, ease of usage, and certain moral issues attached to particular devices. They hope that bringing together these crucial points of user experience will help strengthen the dialogue about the various technologies—between customers and their caretakers on one hand and researchers, engineers, and clinicians on the other. Moreover, the book’s information enables users to become better educated about the devices they would like to try out without being biased by sales pitches from commercial organizations.

One advantage of a book that encompasses such a varied readers’ audience is its greater inclusiveness compared to books on similar topics—books that usually exclude laymen lacking technical expertise. In fact, all are invited to the table to explore a book with highly technical but comprehensibly written information and more descriptive parts dealing with consequences

of the user experiences. Visuals, charts, diagrams, tables, detail-focused references at the end of each chapter, and the book's glossary— all support readers of different backgrounds through their search for new terms and resources. Thus, the book allows specialists and non-specialists a glimpse into each other's world, to find better ways of connecting and understanding each other, and working together for their mutual benefit.

Kumar and Arjunan also emphasize the importance of bringing into the discussion another significant and often overlooked audience: the computer games and machine console industries. They might be interested in assimilating HCI technologies for their customers and in such a way to help improve the HCI user experience for the disabled. These industries have a considerable customer base worldwide that could prove a vital source of funding and innovation in HCI research.

Overall, *Human-Computer Interface Technologies for the Motor Impaired's* holistic approach to audience inclusion, its design, and clear language all serve as a fine model for discussing an important issue containing complex technical and social features.

### Tetyana Darian

Tetyana Darian is an STC member and graduate student in Mathematical Computer Science. Her interests are in scientific computing, cybersecurity, and artificial intelligence.

## Scientific and Technical Translation

Maeve Olohan. 2016. New York, NY: Routledge. [ISBN 978-0-415-83786-6. 254 pages, including index. US\$39.95 (softcover).]



*Scientific and Technical Translation* is one of those books I wish I had when I was a student at the Centre for Translation Studies in Vienna at the beginning of the 1990s. The book would have definitely prepared me for the job I got after graduating: I left Austria and came to Ireland to work as a technical translator in the

software localization industry, learning on the job about tools such as Translation Memories and the specific

situations in which technical specialists communicate. All this can be found in Olohan's comprehensive coursebook, which can be used for any higher-education program where technical or scientific translation is taught, because, as she says, "It assumes no prior specialized translation experience" (p. 3).

The coursebook is part of the Routledge Translation Guides and specifically focuses on texts that are typically translated in scientific and technical domains. Five chapters are dedicated to different industry areas: Technical instructions (Chapter 3), Technical data sheets and technical brochures (Chapter 4) in the field of technical documentation; Patents (Chapter 5), and Scientific research articles and abstracts (Chapter 6) in the field of communication of scientific knowledge. Each chapter contains a sound introduction, typical examples, exercises, and key points, ending with numerous references.

What gives *Scientific and Technical Translation* extra value are its first two rich, informative chapters. Chapter 1 (Scientific and technical translation as a professional activity) outlines some of the typical workplace configurations for translators and other professionals in the sector and presents the translation brief and the translation project specification as helpful tools. As a former in-house translator employed by a translation company who turned into a technical writer more than 15 years ago, I could truly see myself in the translation landscape that Olohan describes in this chapter.

Equally important and helpful for any would-be technical or scientific translator is Chapter 2 (Resources for scientific and technical translation), where you find a concise but valuable overview of corpus-based terminology research as well as translation memory (TM), machine translation (MT) technology, and tools.

A crisp glossary and a wealthy appendix with all examples complete this coursebook. As Olohan writes, the book's purpose is not to reduce translation to a set of prescriptions or formulae. "Rather, it focuses on familiarizing you with texts that are typically translated in scientific and technical domains.... However, you will also be guided in your decision making by what you know or assume about the expectations and needs of your translation commissioner and the end users of the text" (p. 4).

What I like most about *Scientific and Technical Translation* is the abundance of real-life examples (which

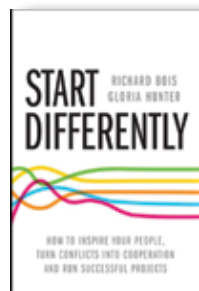
made me think more than once: “Yes, that’s exactly how it really is!”), a wealth of information that will really help you take off in the translation world as well as the readable and practicable way Olohan presents the information .

### Karina Lehrner-Mayer

Karina Lehrner-Mayer holds a degree in translation and has over 15 years’ experience in Technical Communication in Ireland and Austria. She works as a Technical Writer at ISIS Papyrus Europe AG, an Austrian-based company offering solutions for inbound and outbound business communications, where she is responsible for the Documentation Style Guide.

## Start Differently: How to Inspire Your People, Turn Conflicts into Cooperation and Run Successful Projects

Richard Bois and Gloria Hunter. 2015. San Bernardino, CA: Rethink Press. [ISBN 978-1-78133-152-1. 130 pages. US\$16.99 (softcover).]



Richard Bois and Gloria Hunter’s *Start Differently: How to Inspire Your People, Turn Conflicts into Cooperation and Run Successful Projects* is the type of book often on sale at workshops and seminars. In such a book, the presentation highlights appear, but it omits the more specific material found in the question-and-answer

and discussion sessions.

Bois and Hunter claim that trouble occurs in team-solving problems that teams face because they start with objectives rather than agreeing on the problem. One of their examples is of a company doing business in China that realizes that their profits and market share are dropping. The usual approach is to start with an objective: “To increase profits and market share.” The approach is inadequate because the teams usually do not necessarily agree on why profits are down and market share is dropping. Rather, the authors suggest that the team take time to define the problem more specifically.

The Richard Bois Concept then addresses the methods used to gather the requisite data. The sections

address developing information effectively, conducting interviews and workshops, and selling the proposal to solve the problem.

The Concept involves five steps: defining the problem statement, analyzing the situation, defining the objective, defining strategies and actions, and implementing the solution and tracking it. Each step consists of sub-steps; for example, when defining the problem, the authors suggest wording it as a statement and not a question. Once defined, the second part is to define the stakeholders. The third section of problem-solving is to narrow the scope. Each step ends with an example, a case study, applications, and an exercise.

The remaining sections follow this pattern; once the authors explain the Richard Bois Concept, they discuss specific tools: reviewing the previous process, interviews, workshops, and proposals. A case study presentation and extended exercise complete the book.

One problem I have with *Start Differently* is that it is set in (what looks like) 12 point sans serif type with extra leading. That suggests that the book could be shorter if more traditional type size and leading were used. As it is, the book does suggest seriousness to the message that may not be there. Another problem is that the Concept seems to assume that you can apply this method to any problem. The amount of time needed for this approach suggests large, complex problem-solving situations. Like any such self-help book (and, I assume, seminar), all will be well and run smoothly if you apply their method—here start by defining the problem not an objective. Granted, the Richard Bois Concept does cut the preliminaries so that the team can address analysis and proposed solutions sooner.

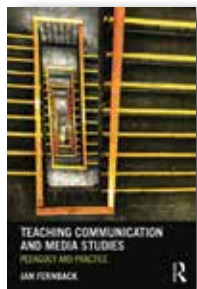
For someone new to team leadership, *Start Differently* can be a good way to start, and it is a fast read because of the large type and increased leading.

### Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

## Teaching Communication and Media Studies: Pedagogy and Practice

Jan Fernback. 2015. New York, NY: Routledge. [ISBN 978-0-415-88664-2. 174 pages, including index. US\$42.95 (softcover).]



Communication is a culture practice for creating, maintaining, and transmuting society. Studying “how we live in the world” that acknowledges our media-inundated existence is significant for holistic personal development and citizenship promotion. Jan Fernback in her book, *Teaching Communication and*

*Media Studies: Pedagogy and Practice*, provides a conceptual and practical guide to mediated communication pedagogies. These pedagogical strategies are both unique to mediated communication and broad to cover all aspects of college teaching.

In the introduction, Fernback views Sprague’s (1993) discipline-specific pedagogy as the fundamental approach to this book. The discipline-specific pedagogy recognizes the implicated cultural identity in communication process, form, and content. Fernback argues that teaching is not a by-product but a focus of research. A teacher’s academic identity is, as a result, the combination of researcher and teacher. In chapters 2–8, Fernback discusses the teaching philosophy, technologies in the classroom, learning objectives, course goals and assessment, instructional design, learning patterns, and ethics and citizenship in teaching communication.

Teaching philosophy systematically represents a teacher’s academic identity and serves as the birthplace for teaching practices. Inherited John Dewey’s (1916) philosophy that society exists in communication, Fernback advocates active learning to encourage students’ engagement, and through that engagement to create actual experience and to understand their roles as media creators and consumers. Active learning can enhance the students’ social consciousness and finally contribute to social reconstruction.

Knowing categories of thinking and ways of learning is imperative before setting course goals, assessing learning, and structuring courses. Chapter 4 illustrates the hierarchies of thinking and the skill, affective, and cognitive dimensions in learning strategies. Fernback

designs an overlay of cognitive objectives and five levels of affective goals for media and communication studies based on Bloom’s (1954) taxonomy besides the psychomotor competencies based on Simpson’s (1972) skill dimensions. Chapter 7 discusses Kolb’s experiential learning theory and “learning styles inventory,” both of which originate from Dewey’s (1938) argument of learning from experience.

Chapters 5 and 6 address the process of goal setting, assessment, and course construction. The characteristic of these chapters (and throughout this book) is the interviews of experienced instructors who offered concrete teaching practices on various issues: for example, what is the process of setting course goals, how these goals reflect the teaching philosophy, how to construct assessment, course design dictated by course goals, etc. These interviews and sample exercises are valuable first-hand experiences to new teachers.

*Teaching Communication and Media Studies* also features teaching with new technologies and in a digital environment. Fernback warns teachers not to dazzle students with technology because it does not mask teaching inadequacies. Instead, educators should deploy proper technologies guided by teaching philosophy and course goals. For teaching in a digital culture, Fernback introduces the connectivism theory that accounts for collaborative learning and digital literacy. She also designs approaches for online courses.

I recommend this book to those who teach communication/media studies or related disciplines for systematic course design to enhance their teaching experience and open discussions of emerging teaching issues in a digital environment.

### Lin Dong

Lin Dong is a PhD candidate in Rhetoric and Composition at Georgia State University. She is currently preparing her dissertation on international crisis communication from a sociotechnical aspect. Lin has broad research interests in transcultural and international rhetoric and communication, especially in technical and professional communication in global contexts.



## The Master Communicator's Handbook

Theresa Erickson and Tim Ward. 2015. Alresford, Hant, United Kingdom: Changemakers Books. [ISBN 978-1-78535-153-2. 84 pages. US\$14.95 (softcover).]



*The Master Communicator's Handbook* was written by a “Master Communicator” and is for those who wish to become one. It is one of the few books out there that is concerned not only with getting your message across to your readers and listeners but also with having them act on it. As the authors state, “Communication is

not about output [by the writer], it’s about impact [on the reader]” (p. 21).

This book is not Communications 101. It isn’t concerned with K.I.S.S. (Keep It Simple Silly), readability formulas, or Joe Williams’ elegance. It is not about grammar. Plenty of books exist today for that. *The Master Communicator's Handbook* is about how to write to your readers and listeners so that they don’t hit the Delete button before they get to the second paragraph or turn to their phones while you are speaking. It’s written so that you become a “powerful advocate for your cause and your organization . . . a catalyst for transformation” (p. 3). As the authors state in their introduction, their “approach to communications is based on clarity, leadership and impact” (p. 2).

*The Master Communicator's Handbook* is specifically written for those in organizations “dedicated to making the world a better place,” such as the World Wildlife Fund (WWF), the Society of Conservation Biology, the United Nations, the World Health Organization (WHO), and the World Bank, all clients of the two authors. The authors sprinkle in actual stories of their clients’ communication challenges and their solutions.

I began examining this book thinking I would simply skim it, yet by Chapter 2, I was reading slowly and underlining and annotating new ideas, underlying concepts, and tips.

It is a book that recognizes and stresses the need to write reader-based documents. That need has taken the authors, just as it has this reviewer, to study neuroscience to understand how we read, why we act, and what makes us act the way we do, and then apply these theories to our communications.

Several chapters are specifically concerned with oral communication, speaking to both large and small groups. These include aspects that are seldom discussed, including answering questions and using symbols and icons. Most chapters, however, contain recommendations that are applicable to both oral and written communication. These, too, contain topics that are almost never covered in books on effective communication, including framing an argument, what the psychologists term cognitive cultural dissonance, transformational storytelling, and reframing (changing people’s positions on a topic).

Anyone working in a nonprofit or environmental organization can find much needed assistance for “changing the world” in *The Master Communicator's Handbook*. I certainly did.

### Carolyn Boiarsky

Carolyn Boiarsky, PhD, is an STC Associate Fellow and a 1998 winner of the Frank R. Smith Award. She teaches in the English Department at Purdue University Northwest-Calumet Campus. Carolyn is the author of three books related to technical communication, the most recent being “Risk Communication and Miscommunication” (2016).

## Academy-Industry Relationships and Partnerships: Perspectives for Technical Communicators

Tracy Bridgeford and Kirk St.Amant, eds. 2015. Amityville, NY: Baywood. [ISBN 978-0-89503-907-1. 256 pages, including index. US\$75.00 (softcover).]



*Academy-Industry Relationships and Partnerships: Perspectives for Technical Communicators* is an edited collection that delves into a relevant trend within technical communication: the relationship between academic researchers and industry-based practitioners. As Carolyn Rude mentions in the book’s Foreword: “It is hard for academics to know the needs of the field and to develop research and curricula appropriate to practice if we do not talk with people in industry” (p. vi–vii).



And as St.Amant writes in his introduction: “[T]he goal of this collection is to provide a sampling of approaches readers can use when considering how they, as members of academia or industry, might approach this idea of collaborating within different context” (p. 3). The book’s goal is to help both academics and industry practitioners of technical communication help each other to grow the field.

The editors explore this reciprocal relationship through 11 chapters on topics ranging from perspectives on technical communication programs in universities to reflections on relationships with various industry contexts to venues for fostering relationships to mutually beneficial opportunities for research and writing. Each chapter is written by different author(s) and covers the following approaches to fostering academy–industry relationships: using stakeholder theory (Chapter 1), entrepreneurship (Chapter 2), experiential learning (Chapter 3), internships (Chapter 4), mentoring programs (Chapter 5), partnering with government (Chapter 6), partnering via emerging technologies (Chapter 7), partnering via a user experience facility (Chapter 8), engaging with community-based organizations (Chapter 9), developing mutually beneficial research agendas (Chapter 10), and using virtual collaboration (Chapter 11).

As an academic, I found all these approaches to be exciting methods for engaging with my industry counterparts. Each chapter provides clear, hands-on advice for trying out the approach discussed. Tharon Howard’s chapter on fostering partnerships in a user experience (UX) facility, for example, contains very useful reflections on his work as director of the Clemson University Usability Testing Facility. He describes how his role as a UX researcher in academia has changed over the years from providing basic usability testing and documentation services to working more directly with project managers to validate and contextualize digital products and services. I found this reflection to be incredibly useful as an early career academic looking to form these kinds of relationships at my own university.

Though *Academy-Industry Relationships and Partnerships* would certainly be of interest to members of the industry seeking to form relationships with their academic counterparts, and includes contributions by two respected industry practitioners: Beth L. Hewett and Charlotte Robidoux, I yearned for more work by

members of industry. I am curious, for example, what other approaches industry practitioners take when partnering with academics (besides the two discussed here). On the other hand, in my personal experience these partnerships are often driven by academics seeking to develop new opportunities for their institutions, so perhaps this focus is more appropriate than at first glance. Ultimately, the book is a useful and much-needed contribution for anyone looking to foster mutually beneficial relationships between industry and academia to help grow the field of technical communication.

### Guiseppe Getto

Guiseppe Getto is a faculty member at East Carolina University. He is also President and Co-Founder of Content Garden, Inc., a digital marketing and UX consulting firm.

## The Routledge Handbook of Strategic Communication

Derina Holtzhausen and Ansgar Zerfass, eds. 2015. New York, NY: Routledge. [ISBN 978-0-415-53001-9. 596 pages, including index. US\$219.00.]



For a graduate student in rhetoric and composition, strategic communication has been one of my research interests because it is a much contested, neglected, yet emerging field with exciting opportunities and challenges. It is not easy to find comprehensive literature on the evolutions of

concepts and theories since the strategic communication field is witnessing recent development and growth. *The Routledge Handbook of Strategic Communication* provides the field’s first comprehensive review of research in strategic communication and also presents a compilation of various approaches on dynamic aspects.

This handbook has four parts starting with eight theoretical chapters reviewing the field’s conceptual foundations, followed by eight chapters examining the impact of institutional variables on strategic communication, another six chapters on implementing

strategic communication, and ending with fifteen chapters illustrating different research areas of practice. Chapter 1 by Holtzhausen and Zerfass expands the original meaning of strategic communication defined by Holtzhausen et al. to include a “communication sphere” (a more participative public sphere) as an integral construction. Chapters 2 and 3 deconstruct the term of strategy and identify an emerging “strategic turn” that transforms all communication into strategical communication. Chapters 4 and 5 review the philosophical foundation of the public sphere in Europe and in America. Part I concludes with three chapters investigating the application of social theories, like social network theory, to strategic communication.

Part II (Chapters 9–16) provides an institutional perspective on strategic communication issues by analyzing some influential factors to institutional strategizing, such as institutional structure, organizational culture and knowledge, the communication capability of executives, and organizational goals.

Focusing on the interaction between the strategic communicator and stakeholders, Part III presents key concepts and synthesizing theories for strategic message design. Chapter 17 identifies the kinds of strategic communication messages, describes message strategy use and effectiveness, and synthesizes theories from both public relations and advertising into a parsimonious framework for strategic message design. Chapter 18 shows two experimental studies to test two framing hypotheses, attribute-goal framing, and individual-societal framing, providing a guideline for developing effective messages. Chapters 19 and 20 discuss strategic visual communication. Chapters 21 and 22 argue for participative practice in strategic communication under the impact of new communication technologies.

The 15 chapters in Part IV each deal with a different area of strategic communication, including advertising, terrorism, governmental and political communication, health communication, international non-governmental organizational communication, crisis and risk communication, communication in social change, and the impact of social media to strategic communication.

In summary, *The Routledge Handbook of Strategic Communication* explores the burgeoning field of strategic communication from a multi-disciplinary perspective. The wide range of topics that the editors cover in this book will help scholars build a comprehensive body of

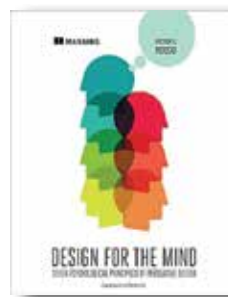
knowledge on both research and practice, and will also direct the promising path for future studies. After close reading, I heartily recommend it as an essential resource book for scholars and graduate-level students interested in strategic communication.

### Lin Dong

Lin Dong is a PhD candidate in Rhetoric and Composition at Georgia State University. She is currently preparing her dissertation on international crisis communication from a sociotechnical aspect. Lin has broad research interests in transcultural and international rhetoric and communication, especially in technical and professional communication in global contexts.

## Design for the Mind: Seven Psychological Principles of Persuasive Design

Victor S. Yocco. 2016. Shelter Island, NY: Manning Publications Co. [ISBN 978-1-61729-295-8. 225 pages. US\$39.99 (softcover).]



What if you could attract users to your website or application and increase its use and usability by understanding why people behave the way they do? Too often, designers overlook the psychology behind human behavior when creating digital content. In *Design for the Mind: Seven Psychological*

*Principles of Persuasive Design*, Victor S. Yocco teaches us how to incorporate accepted psychological principles in our digital designs.

This book is divided into four parts. Part 1 introduces readers to the application of psychology to design and the principles of persuasive design. Yocco explains why he chose these principles and the criteria he used for selecting them, which include extensive research and broad acceptance in academia.

Part 2 discusses Yocco's first three principles: planned behavior, which is the behavior that individuals knowingly engage in; Prospect Theory and heuristics, which concern making risky decisions and the mental shortcuts people use in their decision-making processes;

and Fogg's behavior model, which introduces the principle of motivation, ability, and trigger.

Part 3 explores the principles of influence and the processes and tactics, which can influence people to change their attitudes. Yocco examines methods of framing communication to influence people, or, in his words, "It's not what you say; it's how you say it!" (p. 141). He puts a positive spin on the concept of persuasion, which focuses on generating a new or reinforced attitude toward a product and its use.

Each chapter in Parts 2 and 3 includes several features: a scenario of the principle in action, its academic background and research history, real-life digital design examples, a case study, a summary of key points, and a user exercise. Yocco also presents what he calls "talking the talk," in which he provides the rationale and sample narrative that can be used when pitching your design to clients. Yocco provides a detailed list of references at the end of each chapter for those readers who want to delve deeper into the science behind his principles.

Part 4, "Putting it All Together," applies the seven psychological principles in an in-depth case study. This part also provides a roadmap for designers to begin using psychological principles in their own designs and provides techniques for measuring the effectiveness of their design improvements after applying these principles.

Yocco presents the information in *Design for the Mind* in a well-organized, clear, and consistent manner. He provides myriad examples of websites that are directly applicable to Yocco's principles. He directs us through the design process, from determining what psychological principles best apply to our design to measuring our return on investment after incorporating these principles. Yocco has created a valuable guide for anyone involved in the design of an effective website or application.

### Alice Gero

Alice Gero is pursuing her master's in Technical Communication at the University of Alabama in Huntsville. She currently works at SAIC as a technical writer supporting a major US Army Aviation project.

## Herbert Leupin: Poster Collection 28

Bettina Richter, Hermann Strittmatter, and Museum für Gestaltung Zürich, eds. 2016. Zürich, Switzerland: Lars Müller Publishers. [ISBN 978-3-03778-506-5, 80 pages. US\$25.00 (softcover).]



*Herbert Leupin: Poster Collection 28* showcases the unparalleled conceptual image-making of Leupin's oeuvre through the medium of the poster. This new publication traces work produced over his long career beginning in 1939 and progressing to his iconic cartoonish style and playful approach to advertising goods.

Richter says, "Leupin's posters get their message across with charm and wit. They tell their audience stories without saying a word and lure customers with easy-to-solve Rebus puzzles" (p. 5).

This book is filled with memorable images **reflecting** an early conventional Swiss style to a hyperrealistic technique and evolving forms of expression combining photographic material, bright colors, and a playful wit. As Strittmatter says, "The ads have to grab attention, but they should also be extremely entertaining. In other words, advertising has to take people by surprise and be funny and upbeat, evoking a congenial wink of the eye, spreading high spirits and giving the viewer a chance to feel clever for grasping the creative idea behind it" (p. 35). This is the by-product of a renowned Swiss poster designer who embodied a unique perspective and singular vision to tell a brand's story. The evenly balanced weight of images on the interior pages, showcasing posters across a wide range of cultural institutions, social and civic organizations to commercial projects over five decades, reflects a simple, sophisticated appearance throughout.

The Museum für Gestaltung – Schaudépot's poster collection is an all-inclusive and remarkable archive of the history of the poster, in Switzerland and throughout the world, beginning in the 19<sup>th</sup> century to the contemporary era. Richter says, "It was always the idea to find a way to show the treasures of our collection with about 350,000 posters arranging them by themes, graphic designers and so on and to illustrate not only graphic design questions but also looking at posters as a part of a cultural and historical heritage. The focus is

on the images, therefore we tried to find a layout which give us in a pattern easily to copy for every new book a possibility to show large images and groups of posters” (private email conversation).

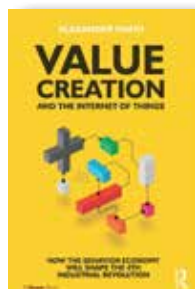
Altogether, *Herbert Leupin: Poster Collection 28* is an engaging, comprehensive historical analysis, supplemented by a numerous collection of Leupin’s stylistically diverse repertoire of poster designs. As a foremost proponent of the Sachplakat or “Object Poster” style of the 1940s, Leupin developed a realistic style of poster art to convey simplified messages by reducing words and images to a shorter form to communicate straightforward information. The book is essential reading for design students interested in the art of Swiss advertising and poster design as well as necessary reading for the specialized professional, or anyone interested in 20<sup>th</sup> century graphic design history. It is a key addition to the evolution of graphic design history as a scholarly discipline and a very useful resource on Swiss advertising graphics and modern graphic design.

### Richard Doubleday

Richard B. Doubleday is an Associate Professor in the Department of Graphic Design at Louisiana State University’s School of Art. He is a contributing author for *Dialectic*: a scholarly journal of thought leadership, education, and practice in the discipline of visual communication design; Phaidon Archive of Graphic Design; and Meggs’ History of Graphic Design.

## Value Creation and the Internet of Things: How the Behavior Economy will Shape the 4th Industrial Revolution

Alexander Manu. 2015. Burlington, VT: Gower Publishing Company. [ISBN 978-1-4724-5181-1. 236 pages, including index. US\$119.95.]



*Value Creation and the Internet of Things: How the Behavior Economy will Shape the 4th Industrial Revolution* is a dense analysis of the way our evolving experiences shape business. It is not an easy read. The overall message is clear and reinforced throughout the book: Behavior will

shape change, and the people and companies that embrace changing behaviors will shape the future and leave behind those that continue with the status quo. I started this book expecting a stronger technology focus but found it to explain technology more as a tool to achieve changing potential rather than the change driver. It is an informational book that provides thorough examples and thought-provoking conversation.

Manu separates the book into five sections that transition from identifying potential value to transforming that potential into something viable and attainable that shapes the future. He says we are changing from a somewhat passive economy where we buy goods without engaging with the companies that sell them into a “behavioral economy” that wants to not only buy goods but become part of an experience and contribute to a conversation. You could argue this idea dates back to the beginning of trade—or at least back to Nike’s Air Jordans—but Manu stresses the Internet and social media’s role in consumers’ ability to interact with companies and companies’ abilities to create brand experiences and learn from those experiences. He says, “When inventing things like the World Wide Web or the electric motor, we are not seeking to solve problems, we are searching for a new way of life, for a wide field of possibility that will open up multiple behavior spaces to be imagined and implemented by the ones that come after us” (p. 87).

Next, Manu describes value capture and delivery: how you change the present to make the future. He says there are three categories of development for the Internet of things: enhance our experience of current products/services, expand our relationship and engagement with current products/services, and redefine our relationships through new products/services. Then, guest author Kovalyukh explains that organizations have to find a way for employees to buy into their mission by adopting what is good for the organization, into the value system of the individual. The final section focuses on ideology, leadership, and strategic value together. The authors (Manu and Hastrich, who contributed two chapters) tie the themes from the earlier sections into a discussion about a successful organization. It boils down to a *pilot*, someone who can lead by being a visionary and make their ideas materialize into the desires for the future.

Filled with examples of companies that created value (Netflix) and ones that missed opportunities (Polaroid),



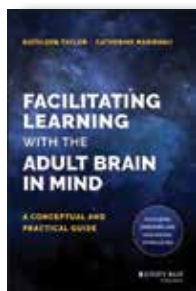
*Value Creation and the Internet of Things* challenges the reader to examine the drivers, thought processes, and behavioral society that shape technology and the economy as they move from present to future.

### Stephanie Saylor

Stephanie Saylor is an STC member and a technical writer at Next Century Corporation. She received her master's degree in digital communication from Johns Hopkins University. Stephanie is a plain language enthusiast, working mom, advocate for food allergy awareness, and tweets @plainlang.

## Facilitating Learning with the Adult Brain in Mind: A Conceptual and Practical Guide

Kathleen Taylor and Catherine Marienau. 2016. Jossey-Bass. [ISBN 978-1-118-71145-3. 400 pages, including index. US\$45.00.]



Understanding how adults learn is important to those who teach and develop courses for adults. In *Facilitating Learning with the Adult Brain in Mind: A Conceptual and Practical Guide*, the authors describe how the brain works and how to use this knowledge to help adults learn and perform more effectively in a

variety of settings.

Taylor and Marienau mention in the preface that they wrote this book because when they went looking for information on recent neurobiological discoveries they could not find information that was easy-to-understand or specifically applicable to adult learning. The authors wrote this book in three parts with the emphasis on Adult Learning Facilitators in Any Setting (ALFAS). Each chapter ends with questions to encourage further reflection and a summary of key points that are very helpful.

In Part One, the authors request that you not skip this section to get to the more “useful stuff” as it deals with brain basics—scientific explanations of how the brain developed in humans; how experience, memory, and emotions create an embodied brain that leads to learning; and how metaphors and analogies

help the brain categorize new information and the role of both the right and left hemispheres in the learning process. Using simple illustrations and examples, Taylor and Marienau make this complex information easy to understand and set the stage for the practical information that follows.

Part Two focuses on practices that can encourage and help adult learning. Using a visual metaphor called “Theater of Knowing,” the authors present activities, exercises, and strategies from several practitioners in the field from different parts of the world. The topics range from how to alleviate learner anxiety and how to spark curiosity, to how to encourage reflection and feedback. This part of the book is full of practical ideas with associated explanations of how they relate to the “brain aware” points that were discussed earlier and how they promote learning.

Part Three brings together the information from the first two parts by discussing theories and models from experts in adult development, psychology, and philosophy fields.

*Facilitating Learning with the Adult Brain in Mind* is a good resource to anyone involved with adult learning. Although it tends to be more scholarly and academic in nature, it includes many practical exercises for use in both academic and corporate learning settings.

### Preeti Mathur

Preeti Mathur is an STC Associate Fellow. She is a member of the Twin Cities chapter, Editor/Member Technical Communication Body of Knowledge (TCBOK) and past co-manager for the STC Instructional Design & Learning SIG (IDL SIG). She works as an independent consultant, developing technical training and documentation for several industries.



## Risk Communication and Miscommunication: Case Studies in Science, Technology, Engineering, Government, and Community Organizations

Carolyn R. Boiarsky. 2016. Boulder, CO: University Press of Colorado Press. [ISBN 978-1-60732-466-9. 140 pages, including index. US\$20.95 (soft cover).]



Boiarsky dissects communications surrounding environmental and other disasters in the US during the last few decades to show what went wrong (and sometimes right) within the companies and government agencies involved. In the process, she analyzes not only the content of emails and letters leading up to the

event in question but also the form and timing of the communication in question. Most of her examples are drawn from internal memos, emails and letters, but some relate to publicly provided information.

This book delves into the communications before the 1992 Chicago flood, the 2011 Mississippi flood, the 2003 *Columbia* space shuttle breakup, 2010 Deepwater *Horizon* oil spill in the Gulf of Mexico, the 2012 expansion of the Enbridge pipeline, and persuasive writing by two sides of the controversy over the continued extraction of coal. As Boiarsky acknowledges, not everyone will be familiar with the details of these events. She therefore provides a list of resources, organized by book chapter, that provide additional background on each issue.

While explaining the inappropriate decisions the writers of most of the book's sample texts made, Boiarsky also offers ideas on how those communications could have been improved, concluding with guidelines for effective PowerPoint presentations—a form of communication many of us deliver not infrequently. Most of us are not involved in projects as large and potentially dangerous as those in this book. Yet we can still learn from these examples how to better shape our own writing to avoid misunderstanding, place appropriate emphasis on key pieces of information, and make sure our message is heard clearly.

One complaint from this reviewer: The sample texts are included as relatively small images that are hard to

read. Larger images or inclusion of the samples' content within the text of the book—perhaps as sidebars—would have been helpful for following and evaluating Boiarsky's arguments.

As I write this, the US just elected its 45th president. Messaging—both overtly and implicitly—played an important role in the campaigns leading up to the election. We would do well to critically examine what our own writing communicates or implies and whether it places appropriate weight on the points we want to make. As communication professionals, we need to counter demagoguery with clear, concise, and audience-focused reasoning.

### Barbara Jungwirth

Barbara Jungwirth owns reliable translations llc ([www.reliable-translations.com](http://www.reliable-translations.com)), where she translates technical documents from German into English. She was previously a technical writer and IT manager and currently serves on the board of STC's New York Metro chapter. Barbara writes a blog (On Language and Translation) and tweets (@reliabletran).

## Please Make This Look Nice: The Graphic Design Process

Peter Ahlberg. 2016. New York, NY: Skira Rizzoli. [ISBN 978-0-8478-4834-8. 272 pages, including index. US\$39.95 (softcover).]



Description from the Drawing Center website: "Equal parts design inspiration and manual, *Please Make This Look Nice* combines interviews, writings, case studies, and personal ephemera from celebrated designers into a solid primer for designers and design enthusiasts alike."

This book may or may not become a teaching tool, but this non-designer found it to be an engaging excursion through the current graphic design culture. My work is in documentation and procedures, with graphics work limited to screen shots and flow charts. Those are useful elements, but having a guided tour

through a wider section of the visual communication world is exciting.

Ahlberg presents his multiple sources in a coherent, connected flow throughout the book with a relaxed, conversational tone. He has edited the conversations and essays of 21 designers so that each designer's voice is present in his or her article. The author divided the book into four broad topics: Writing/Drawing, Prototypes/Tools/Photography, Assemblage/Mechanicals, and Objects/Works/Studios. Some articles address more than one section; these are placed to maintain the overall sequencing. Brief headings in each article signal a change of topic, but the transition from one thought to the next is very smooth and logical.

These successful designers work solo, in partnerships, in teams, and in studios. They describe how they find the ideas that meet their client's expectations and demands, which tools and environments suit their working styles, their experiences from the roots of modern graphics design and its future with and without technology. Not unexpectedly, each designer's definition and description of the design process is unique.

*Please Make This Look Nice* has a strong physical presence. Although it is softcover, the paper is heavy and glossy to best present the illustrations that are more than half the page count. The three-column layout of the text pages, with titles on the left and section titles floating on the right, makes it easy to relate the article to its topic. There is enough negative space on each page to avoid fatigue.

The front and back inside cover design references a concept of design described in the Introduction, which summarizes the designer's evaluation of that concept.

The illustrations vary—notebook sketches, first concept drawings, finished designs, photographs of designer's studios and photo shoot set-ups. There are collages and prints. As I read an article, I used the index to find that designer's work in the illustrations section. Tying the verbal and visual together made it easier to understand the designer's point.

Do not try to read this book in one sitting. Skim the text, explore the graphics, and then choose a section. Enjoy these fascinating, inspiring conversations. You will take away a deeper understanding of graphics designers and graphic designers (yes, there is a difference!).

### Marcia Shannon

Marcia Shannon, CPTC-Foundation, is a current STC member and Secretary for the IDL SIG. Her 30+ years of business experience cover IT, mortgage, banking, and insurance. She has written procedures, taught them, and provided user support in each field. Currently, she writes and edits procedures and job aids, and coaches non-writer co-workers.

## Deep Text: Using Text Analytics to Conquer Information Overload, Get Real Value from Social Media, and Add Big(ger) Text to Big Data

Tom Reamy. 2016. Medford, NJ: Information Today, Inc. [ISBN 978-1-57387-529-5. 424 pages, including index. US\$59.50 (softcover).]



If an organization has thousands of customer reviews of its XYZ product, how do they determine if the product is a success based on feedback? One way is by data mining. The problem, according to Reamy's *Deep Text: Using Text Analytics to Conquer Information Overload, Get Real Value from Social Media, and Add Big(ger)*

*Text to Big Data*, is that data mining software would give you the same results from "I love XYZ product" and "I would love XYZ product if it had ABC features." The distinction could come by using text analytics.

One way to look at text analytics is that it imposes structure on unstructured text. The complexity increases with data mining and beyond. Text analytics represents a final complexity for Reamy. Text analytics combines data mining with semantics or pragmatics.

Many organizations are having difficulty with the volume of text. From sticky notes to formal and informal documents to electronic texts, they store it but then what? Small amounts of text can be handled by simple searches by hand or computer. Even modest amounts of text can be processed by dictionary and thesaurus software. Now, data mining software can handle larger amounts of text. But these methods, while

efficient at the word and phrase levels rely on human intervention to extract full meaning.

Reamy's *Deep Text* offers a way to extract meaning; text analytics goes beyond data mining to give organizations a tool that allows them to make the most use of the texts they have accumulated.

Text analytics is a complex approach that almost defies definition. Yet, Reamy tries: "... the use of software and content models (taxonomies and ontologies) to analyze text and the applications that are built using this analysis" (p. 5). Deep text becomes "an approach to doing text analytics, and . . . the kinds of applications that can be built using this approach" (p. 375). From this expanded definition, he develops both his case for using text analytics and hints on building and using it. Reamy divides his presentation's 15 chapters into five parts (each containing three chapters), and adds a conclusion, two appendices, a bibliography, a short biography, and an index.

After an introduction, Part One explains text analytics basics, Part Two offers suggestions on getting started, Part Three discusses text analytics development, Part Four shows applications, and Part Five discusses text analytics in the enterprise. Appendix A is a series of questions you can ask to help design a text analytics solution, and Appendix B lists 32 text analytics companies as well as 18 free text analytics and text mining software products.

Text analytics is complex and not for the faint of heart. Yet, organizations must find a way to extract information they need from the texts they accumulate. Reamy's *Deep Text* should encourage you to pursue text analytics rather than look somewhere else for solutions.

### Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

## Clinical Communication in Medicine

Jo Brown, Lorraine M. Noble, Alexia Papageorgiou, and Jane Kidd, eds.  
2016. West Sussex, UK: Wiley Blackwell. [ISBN 978-1-118-72824-6. 264 pages, including index. US\$60.00 (softcover).]



In the medical field, clinical communication is often taught on the job. Jane Kidd, one of the editors of *Clinical Communication in Medicine*, feels that this is a concern because "students learn simply to copy certain statements or behaviours, without a deep understanding of which approaches are effective and why" (p. 1). This book remedies this lack of understanding by exploring the theoretical underpinnings in three areas: the doctor–patient relationship, clinical communication components, and effective teaching and assessment strategies (p. 1).

*Clinical Communication in Medicine* is divided into three sections, each tackling one of these areas. Although the book's organization is modular by allowing the reader to review the chapters in any order, the chapters follow a logical sequence that progresses from the most basic information to the more complex issues in clinical communication. Similarly, the chapters themselves follow this "given–new contract." Each chapter begins with an exploration of information that is known about the topic before delving into a discussion of new directions and current research. This structure allows even novice students to learn about the topic under discussion, from its most basic principles to the most current applications.

The book's authors focus primarily on communication theory and medical history to draw the reader into a greater understanding of how current best practices in clinical communication have evolved. Although the explanations of the theories and practices are outlined clearly and in language that the average graduate or medical student could understand, many authors used excessive passive voice, which I found distracting. As a technical communicator who often writes for the medical fields, I know the importance of active voice and simple language when communicating with patients. Ironically, *Clinical Communication in Medicine* does not contain any chapters or information

specifically tied to written clinical communication, which some of the authors might have benefitted from.

Most of the discussion within the book is applicable to clinical communication in medical settings worldwide. However, since the majority of the authors are from the UK, the book's focus centered on the reality of the National Health Service (NHS) and other UK-based medical contexts. For example, "Chapter 3: The History of the Doctor–Patient Relationship" discusses the evolution of the view of healthcare as a human right, which is arguably not the way healthcare is seen in the United States or other countries without a socialized medical system.

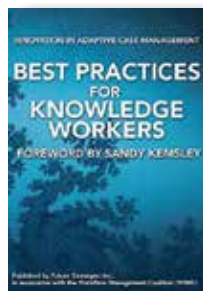
Despite a slight bias toward medicine in the UK and some unnecessarily wordy language, *Clinical Communication in Medicine* is a timely, well-organized, and thoughtful text that will be useful to a broad audience of graduate students, medical students, academics in the communication fields, and medical professionals. The book's focus on the clinical context and the skillful weaving together of history, theory, and current practice meet the editors' goal of helping the reader understand the "whys" of clinical communication, as well as the "how-to's."

#### Nicole St. Germaine-Dilts

Nicole St. Germaine is an Assistant Professor in the Technical and Business Writing Program at Angelo State University, as well as a freelance writer and consultant. Her research interests include technical communication for a Mexican-American audience and technical communication in the health fields.

## Best Practices for Knowledge Workers: Innovation in Adaptive Case Management

Layna Fischer, ed. Lighthouse Point, FL: Future Strategies, Inc. [ISBN 978-0-9863214-4-3. 257 pages, including index. US\$40.00 (e-book).]



This comprehensive book should be on the reading list of people working in Knowledge Management (KM), Human Resources, Analytics, and Business Process Management (BPM).

Divided into two sections, Section 1 focuses on Knowledge Work and Case Management while Section 2 includes case studies ranging in topic from electronic documentation at the National Institute of Allergy and Infectious Diseases to Universal Forest Products' enterprise content management system. There is a bonus chapter on automated case management best practices for those accessing the digital version.

The Workflow Management Coalition (WfMC) and BPM.com co-sponsor WfMC Awards for Case Management "designed to highlight the best examples of technology to support knowledge workers" (p. 16). The eight case studies in Section 2 are award winners. Each case study is presented in a standard format making it easy for readers to find the business context, the key innovations, hurdles overcome, key benefits, and the best practices. Included graphics also benefit the reader through interesting figures, tables, and charts that make the content lively. If your reading time is limited, reading the overview, best practices, and conclusion sections will provide you with a significant amount of information letting you decide on which topic or chapter to devote more time. The content is so well-organized that it is easy to extract the needed information.

Recruiters and managers of knowledge workers will find ideas to motivate staff, improve processes, and adapt social collaboration practices. Information technology enthusiasts will see how data mining and analytics can benefit knowledge workers for greater organizational efficiencies. Business process gurus will value the case study examples of processes in practice and can avoid pitfalls experienced by others implementing or revamping procedures.



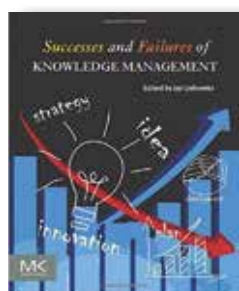
*Best Practices for Knowledge Workers: Innovation in Adaptive Case Management* is truly a one-stop shop for best practices and relevant case studies on the interconnected fields of KM, BPM, and analytics. It focuses on the knowledge worker while also presenting the customer perspective giving readers a well-rounded viewpoint.

### Liz Herman

Liz Herman, PhD, is a knowledge management practitioner and is certified in project management and technical communication. She is an STC senior member and active in STC's Washington DC Chapter. She currently works for Battelle in its Health and Analytics business unit.

## Successes and Failures of Knowledge Management

Jay Liebowitz, ed. 2016. Cambridge, MA: Morgan Kaufmann. [ISBN 978-0-12-805187-0. 232 pages, including index. US\$59.95 (softcover).]



In *Successes and Failures of Knowledge Management*, Tsui—author of Chapter 6, Lessons Learned from Nearly 200 Cases of KM Journeys by Hong Kong and Asian Enterprises—reminds us that most organizations are not starting their knowledge management (KM) journeys from

scratch. Similarly, readers of this book are most likely not KM novices. They come to this book battle-tested and seeking the stories that help them better understand the nuances and complexities of implementing KM programs and learn from other KM failures. They want to compare their experiences with experts in the field. They want to pick and choose the topics that most interest them in their KM journey. Liebowitz pulls together a variety of topics that appeal to those teaching KM and those practicing KM through the inclusion of relevant case studies and discussion around new technologies.

One standout chapter with universal appeal to all readers is written by Ribiere and Calabrese on the enduring struggle with KM implementation. The authors surveyed 34 KM experts and identified through text

mining the categories where KM implementations hit roadblocks. The resulting categories are not surprising—culture, measurement and benefits, strategy, organizational structure, governance, IT-related issues, and lack of KM understanding/standards—and serve to reaffirm that there continues to be work (both research and practice) done in the field. The tremendous benefit from this chapter is that readers now have the names and affiliated organizations of 34 KM experts from which to draw information and resources. The list of references after each chapter is also helpful and can remind those immersed in the more operational aspects of KM to reconnect with seminal KM authors (like Thomas Davenport) who have recent work.

KM academics may see affirmations and extensions of their work. Levallet and Chan, discussing knowledge loss and retention, reference de Holan and Phillips' 2004 model of organizational forgetting. The adoption of this model to work in 2016 demonstrates the value and reach of KM research to those adding to KM's still relatively small book of knowledge. KM academics may also recognize weaknesses in the research. A case study, for example, conducted by Larson involved findings that lacked linkage with the organization's key performance indicators and metrics. Although a weakness in one case study, other research discussed in the book does emphasize the importance of linking KM results to an organization's performance.

Those in KM will benefit from reading *Successes and Failures of Knowledge Management*. It addresses the current state of KM, confirms the existing body of knowledge, and provides ideas for how to close informational gaps with future research.

### Liz Herman

Liz Herman, PhD, is a knowledge management practitioner and is certified in project management and technical communication. She is an STC senior member and active in STC's Washington DC Chapter. She currently works for Battelle in its Health and Analytics business unit.

## There's Not an App for That: Mobile User Experience Design for Life

Simon Robinson, Gary Marsden, and Matt Jones. 2015. Waltham, MA: Morgan Kaufmann. [ISBN 978-0-12-416691-2. 418 pages, including index. US\$49.95 (softcover).]



*There's Not an App for That: Mobile User Experience Design for Life* seeks to answer the not-so-age-old-question: Is my app idea any good? The authors correctly identify the much-lowered threshold for creating mobile apps as a driving force in the birth of thousands of new apps every year.

They strongly critique tendencies in current mobile design to encourage what they call “heads-down thinking” or the design of mobile apps that discourage interaction with the real world (p. 17). They argue that mobile app designers can do a better job at accommodating the real people who use their applications.

Specifically, the authors identify six problems with current mobile design thinking: touch-screen dominance; heads-down thinking; clinical helpfulness; calm, understated interactions; stuck in the cloud(s); and design for the few. For each problem, the authors encourage “alternative trajectories for mobile user experience design” (p. 26). In Chapter 7, for instance, which is a response to the “heads-down thinking” problem, the authors wonder what it would be like to design apps that are “face-on,” or “giving your users more of a chance to maintain eye contact with the world around them” (p. 130).

For each of the six problems, the authors suggest multiple possible solutions, some of which seem extravagant (such as a system that allows users to turn pieces of digital “paper” on a touch screen), but all of which are thought-provoking (p. 79). *There's Not an App for That* is arguably more about exploring the future of mobile design and providing bold directions for innovative thinking than it is about the how-to minutiae of mobile design. At the same time, every example is either a) an existing mobile application, or b) a prototype application that has been tested in a lab. This gives the book additional credibility for some of the more out-of-the-box solutions, like “ultrahaptics” or air

vibrations that give users the sense of an object under their fingers (p. 122).

*There's Not an App for That* is a book for practitioners, researchers, and students who want a glimpse at possible futures for mobile app design, or who agree with the authors' assertion that “heads-down thinking” is not the optimal approach for mobile user experience. Though I personally found the book intriguing, I wondered about the feasibility of many of the suggested alternatives. Just because an interaction is technologically possible in a lab or other limited environment doesn't mean that it can or will ever see widespread use. However, perhaps I, too, am guilty of “heads-down thinking” and could do with a dose of alternatives to traditional touchscreens, addictive apps, and complex smartphone interfaces that keep me tuned out of my surroundings.

### Guiseppe Getto

Guiseppe Getto is a faculty member at East Carolina University. He is also President and Co-Founder of Content Garden, Inc., a digital marketing and UX consulting firm.

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Lyn Gattis, Editor

The following articles on technical communication have appeared recently in other journals. The abstracts are prepared by volunteer journal monitors. If you would like to contribute, contact Lyn Gattis at [LynGattis@MissouriState.edu](mailto:LynGattis@MissouriState.edu).

“Recent & Relevant” does not supply copies of cited articles. However, most publishers supply reprints, tear sheets, or copies at nominal cost. Lists of publishers’ addresses, covering nearly all the articles we have cited, appear in *Ulrich’s international periodicals directory*.

## Collaboration

### **Technical communication practices in the collaborative landscape: A case study in media structure transformation**

Löwgren, J. (2016). *Communication Design Quarterly*, 4(3), 20–25. [doi: none]

“Professional practices in technical communication are increasingly being challenged by the emergence of collaborative media that enable users to access technical information created by nonprofessionals. At the same time, these technologies also allow technical communicators to provide a continually expanding audience with knowledge and skills needed now more than ever. Through a co-design case study, researchers developed a new and innovative platform for producing and distributing technical information including user-generated content. Moreover, the events of the case included market strategies in which a professional organization moved from a reactive to a more proactive position on collaborative media. In so doing, they outlined a set of new professional roles for technical communicators including editors, curators, facilitators, and community managers.”

Lyn Gattis

## Communication

### **Communicating briefly: Technically**

Stephens, K., & Barrett, A. (2016). *International Journal of Business Communication*, 53(4), 398–418. doi: 10.1177/2329488414525463

“People and organizations often communicate through technologies that restrict their communication to very few characters: a difficult task when the content is highly technical and specialized. This study relies on the theoretical work of informative and explanatory communication, and it expands the utility of this theory into new communication technology environments where brevity is valued and practically forced on the user. [The authors] content analyzed 1,367 Twitter messages spanning a 6-month time following a highly technical and controversial organizational event. The analyses reveal that even though Twitter is limited to 140 alphanumeric characters, almost one third of all messages contained some type of technical details. The technical translation strategies—direct, elucidating, or quasi-scientific—used in the microblog were either self-contained or briefly introduced with expanded details available by accessing hyperlinks. Furthermore, the specific types of technical translation strategies that this organization used changed over time.”

Katherine Wertz

**Corporate social responsibility and the communication imperative: Perspectives from CSR managers**

Chaudhri, V. (2016). *International Journal of Business Communication*, 53(4), 419–442. doi: 10.1177/2329488414525469

“This study examines the communication imperative for corporate social responsibility (CSR). Based on in-depth interviews with CSR managers in large domestic and global corporations in India, the study furthers scholarly efforts to situate communication as central to the enactment of socially responsible behavior. The article begins by explicating the three prominent approaches—instrumental, relational, and constitutive—advanced in CSR scholarship, as a basis for understanding how CSR managers construct or articulate the case for communication in CSR. Participant discourses suggest an important and multi-dimensional role for communication, emphasize the need for subtlety and balance in communicating CSR, and point to the role of the media as a potential (dis)enabler for ‘getting the word out.’ The study also reflects on the intersections and departures between scholarship and practice of CSR communication.”

Katherine Wertz

**The effectiveness of crisis communication strategies on Sina Weibo in relationship to Chinese publics’ acceptance of these strategies**

Ngai, C. S., & Jin, Y. (2015). *Journal of Business and Technical Communication*, 30(4), 451–494. doi: 10.1177/1050651916651907

This article is applicable to teaching effective communication strategies when using social media in technical writing professions. “With their timely, interactive nature and wide public access, social media have provided a new platform that empowers stakeholders and corporations to interact in crisis communication. This study investigates crisis communication strategies and stakeholders’ emotions in response to a real corporate crisis—the crash of Asiana Airlines Flight 214—in order to enhance our understanding of socially mediated crisis communication. The authors examine 8,530 responses from Chinese stakeholders to crisis communication on the Chinese microblogging Web site Sina Weibo.

Their findings suggest that the integrated use of accommodative and defensive communication strategies in the early stage of postcrisis communication prevented escalation of the crisis.”

Sean Herring

**Managing difficult workplace conversations: Goals, strategies, and outcomes**

Bradley, G., & Campbell, A. (2016). *International Journal of Business Communication*, 53(4), 443–464. doi: 10.1177/2329488414525468

“Many conversations involve sending or receiving ‘bad news.’ These conversations are often dreaded, poorly executed, or avoided altogether. Ways need to be found to make them less difficult and more productive. [The authors] explored these issues through three methodologically diverse studies. Study 1 comprised in-depth interviews with 24 nurse managers. Interviews shed light on the characteristics of difficult conversations and strategies for making them less awkward and more successful. Study 2 was a survey investigating relationships between six dimensions of supportive communication and participant satisfaction with a difficult superior-subordinate conversation. Study 3 experimentally manipulated two supportive communication behaviors, plus a third variable, face-work. Together, these studies show that successful outcomes from difficult workplace conversations require the parties to balance task and relational goals, with the latter particularly dependent on acts of empathy and face-giving.”

Katherine Wertz

**Public engagement in environmental impact studies: A case study of professional communication in transportation planning**

Moore, K. R. (2016). *IEEE Transactions on Professional Communication*, 59(3), 245–260. doi: 10.1109/TPC.2016.2583278

“Environmental impact studies often enlist professional communicators to develop and implement public engagement plans and processes. However, few detailed reports of these public engagement plans exist in either

scholarly venues or government reports. This case reviews one public engagement project in transportation planning as implemented by one professional communications firm. . . . This environmental impact study team was tasked with determining the best way to accommodate the increase in rail traffic [a specific] city anticipated with the development of [a] high-speed rail. The public's input was needed to fulfill environmental impact statement (EIS) requirements and to fully understand the community concerns regarding the increased traffic, noise, vibrations, and family/business displacements. . . . This case provides an overview of the process of developing public engagement plans, the deliverables designed, as well as the key goals that guided the development of public engagement. [The] case suggests that effective public engagement can address intercultural concerns by developing projects that are adaptable, multimodal, and dialogic."

Lyn Gattis

## Design

### ***The communicative work of biology-journal captions: Lessons for technical and professional communication***

Smith, J., Mackiewicz, J., Hanson, D., Fanning, S., & Doan, S. (2016). *Technical Communication Quarterly*, 25(4), 260–277. doi: 10.1080/10572252.2016.1222453

"The authors examined a corpus of figure captions from technical and professional communication (TPC)-journal articles to test their sense that TPC captions do not fulfill their communicative potential as well as, they sensed, journals in science often do. The authors performed a content analysis on captions from biology-journal articles and iteratively tested a coding scheme of caption content. The resulting scheme can help in analyzing caption content, developing captions, and imparting a variety of TPC-related skills to students."

Rhonda Stanton

### ***Letterform research: An academic orphan***

Beier, S. (2016). *Visible Language*, 50(2). [online] [doi: none]

"This paper looks into the history of letterform research and discusses why the discipline has yet to make the big break within design research. By highlighting two of the most popular focus areas (letter distinctiveness and the role of serifs) and by discussing various forms of methodological shortcomings, the paper suggests that future research into letterforms should (1) draw on results from the field of reading research (2) be based on test material informed by design knowledge and (3) move away from the former tendency of looking for universal answers."

Lyn Gattis

### ***Meaning and material in the language of the street***

Cook, V. (2015). *Social Semiotics*, 25(1), 81–109. doi: 10.1080/10350330.2014.964025

"This paper describes the materiality of street signs, an unappreciated and ubiquitous type of everyday written text. Drawing on social semiotics, linguistic landscapes and writing system research, it uses a categorisation of social roles associated with street signs and of the functions of street signs applied to street signs in Newcastle upon Tyne, with some other wider examples. The materials are divided into: stone and metal signs, which use capitals and archaic letters, convey permanence and quality, and are locating in function; signs handwritten or printed on paper, which also use capitals, convey temporary status and novelty and are mostly informing; painted signs, which often use lower case, have highly individual letter forms to express identity, and are usually informing; other materials ranging from glass to snow, expressing diverse ideas of permanence. The conclusion is that the meaning of street signs depends in part on the materials they are made of, particularly to convey permanence and identity."

Edward A. Malone

**The multiple meanings of a flowchart**

Ensmenger, N. (2016). *Information & Culture: A Journal of History*, 51(3), 321–351. doi: 10.1353/lac.2016.0013

“From the very earliest days of electronic computing, flowcharts have been used to represent the conceptual structure of complex software systems. In much of the literature on software development, the flowchart serves as the central design document around which systems analysts, computer programmers, and end users communicate, negotiate, and represent complexity. And yet the meaning of any particular flowchart was often highly contested, and the apparent specificity of such design documents rarely reflected reality. Drawing on the sociological concept of the boundary object, this article explores the material culture of software development with a particular focus on the ways in which flowcharts served as political artifacts within the emerging communities of practices of computer programming.”

Edward A. Malone

**Reading digital with low vision**

Legge, G. E. (2016). *Visible Language*, 50(2). [online] [doi: none]

“Reading difficulty is a major consequence of vision loss for more than four million Americans with low vision. Difficulty in accessing print imposes obstacles to education, employment, social interaction and recreation. In recent years, research in vision science has made major strides in understanding the impact of low vision on reading, and the dependence of reading performance on text properties. The ongoing transition to the production and distribution of digital documents brings about new opportunities for people with visual impairment. Digital documents on computers and mobile devices permit customization of print size, spacing, font style, contrast polarity and page layout to optimize reading displays for people with low vision. As a result, we now have unprecedented opportunities to adapt text format to meet the needs of visually impaired readers.”

Lyn Gattis

**Editing****Scientific author names: Errors, corrections, and identity profiles**

Gasparyan, A. Y., Yessirkepov, M., Gerasimov, A. N., Kostyukova, E. I., & Kitas, G. D. (2016). *Biochemia Medica*, 26(2), 169–173. doi: 10.11613/BM.2016.017

“The issue of inconsistencies of listing and abbreviating author names has come to the fore lately. There are reports on the difficulties of figuring out Chinese surnames and given names of South Indians in scholarly articles. . . . This article presents an example of swapping second (father’s) name with surname in a ‘predatory’ journal, where numerous instances of incorrectly identifying and crediting authors passed unnoticed for the journal editors, and no correction has been published. Possible solutions are discussed in relation to identifying author profiles and adjusting editorial policies to the emerging problems.”

Edward A. Malone

**Education****Lessons from Scranton: Using scenes from the television series *The Office* to teach topics in professional communication**

Bloch, J., & Spataro, S. E. (2016). *IEEE Transactions on Professional Communication*, 59(3), 274–287. doi: 10.1109/TPC.2016.2583300

“Despite efforts to include communication instruction in both college and continuing education curricula for students in all areas of study, workplace surveys continually report that employees’ communication skills are lacking. The differing contexts of school and the workplace may be one reason for this disconnect, so teaching strategies that can effectively bridge this gap are needed. . . . To make undergraduate writing courses more relevant to the workplace, specific scenes from *The Office* were integrated to teach units on negative messages and intercultural issues. Following these clips, students completed both in-class exercises and course assignments pertaining to the topics covered. . . . After completing the class sessions



and associated exercises described here, most students could discern the relevant concepts from the clips; they found both the clips and the associated exercises helpful in learning the concepts; and they recommended ongoing use in future classes. . . . Drawbacks included scenes focusing on what not to do, that often showed communication gone awry rather than the correct way to communicate. Some students also prefer more traditional teaching methods. . . . The results indicate that the use of television clips along with associated exercises can be useful aids in teaching professional communication concepts.”

Lyn Gattis

### ***Where do they go? Students' sources of résumé advice, and implications for critically reimagining the résumé assignment***

Randazzo, C. (2016). *Technical Communication Quarterly*, 25(4), 278–297. doi: 10.1080/10572252.2016.1221142

“This article explores what sources students use for advice while writing their résumés, their reasons for choosing those sources, and their perceptions about the sources' quality. Results from surveys, interviews, and focus groups with 86 undergraduates and 20 career counselors and instructors suggest issues with educators' credibility and students' access. To address these issues, the author suggests that educators approach the résumé as a research project, which empowers students and legitimizes educators' expertise.”

Rhonda Stanton

## **Health communication**

### ***Designing online resources for safety net healthcare providers: Users' needs and the evidence-based medicine paradigm***

Opel, D. (2016). *Communication Design Quarterly*, 4(3), 35–45. [doi: none]

“As the healthcare system in the United States becomes more complex, so does the information needed for administrators and clinicians to keep apprised of new regulatory and systemic changes. In this article, [the

author uses] a review and analysis of an online resource project to identify effective practices to educate and support healthcare safety net organizations, or those clinics that serve low-income populations. The project team consisted primarily of healthcare researchers who used a systematic review of the scholarly literature to develop online systems for transmitting information about healthcare payment and service delivery reform to those serving low income populations. As the technical communicator working on this project, the author advocated incorporating concepts of user research and user-centered design to the project team. This research included a survey of provider-users. The analysis of this project revealed that, in the health and medical community, evidence-based medicine and the genre of systematic literature review may be privileged such that provider-user needs for information seeking are not taken into account when designing online communication based on these reviews. Communication designers may need to work with and adapt the work of translation science and knowledge-to-action to develop more user-centered online content for provider education.”

Lyn Gattis

## **Information management**

### ***DITA and SEO***

Schengili-Roberts, K. (2016). *Best Practices*, 18(4), 88–93. [Center for Information-Development Management] [doi: none]

“[S]earch engine optimization (SEO) [is] the half-art/half-science discipline whose goal is to increase traffic to a web site by seeking improved search engine rankings on the major search engines such as Google, Yahoo!, and Bing. There are digital agencies out there whose *raison d'être* is to increase SEO for their client companies, but this focus is almost always for a company's marketing materials. In many cases, SEO for a company's technical documentation is an afterthought, if it is even thought of at all. Technical documentation is part of the digital and social media landscape, and there is evidence that would-be purchasers will sometimes look at and assess the quality of a product's documentation prior to buying a product. The after-purchase experience is also important, as users may have a need for product documentation

when seeking more information on a particular function or trying to solve a problem. But if users can't find your documentation, it is a lost opportunity to engage with them. While there are some distinct SEO strategies for DITA documentation, the best thing you can do is to know your audience and write for them, as effective SEO for technical documentation is more about content relevancy than 'tricks.'" This article describes how search engines work and discusses what writers should know about optimizing metadata for search engines and for users seeking information.

Lyn Gattis

### **Managing corporate memory on the semantic web**

Khilwani, N., & Harding, J. A. (2016). *Journal of Intelligent Manufacturing*, 27(1), 101–118. doi: 10.1007/s10845-013-0865-4

"Corporate memory (CM) is the total body of data, information and knowledge required to deliver the strategic aims and objectives of an organization. In the current market, the rapidly increasing volume of unstructured documents in the enterprises has brought the challenge of building an autonomic framework to acquire, represent, learn and maintain CM, and efficiently reason from it to aid in knowledge discovery and reuse. . . . The proposed approach gleans information from the documents, converts into a semantic web resource using resource description framework (RDF) and RDF Schema and then identifies relations among them using latent semantic analysis technique. The efficacy of the proposed approach is demonstrated through empirical experiments conducted on two case studies."

Edward A. Malone

## **Instructions**

### **What research has to say about supporting error handling in training**

van der Meij, H., & Flacke, M.-L. (2016). *Best Practices*, 18(4), 94–98. [Center for Information-Development Management] [doi: none]

"Tutorials give vastly more attention to the correct procedures for task accomplishment than to failures to

complete tasks. This fact indicates that helping the user complete tasks without committing any errors is valued higher than helping the user deal with mistakes. Yet, much can be gained from providing more user support for error handling. This article compares views and outcomes associated with error-avoidant approaches to those related to error-inclusive approaches in training. . . . Empirical research comparing an error-avoidant with an error-inclusive approach almost consistently favors the latter. Advantages that have been reported are faster and better task accomplishment, deeper structural product knowledge, better transfer of skill, more positive moods, and higher self-efficacy. These facts should be seen as an important signal that technical communicators can significantly enhance the customer experience by structurally incorporating error handling information in the training materials that they develop."

Lyn Gattis

## **Intercultural communication**

### **The avatars of culture in website localization**

Bahri, H., & Mahadi, T. S. T. (2015). *International Journal of Multicultural and Multireligious Understanding*, 2(6), 33–40. doi: dx.doi.org/10.18415/ijmmu.v2i6.34

"The aim of the present paper is to investigate the most important cultural aspects involved in website localization by drawing on the data obtained from a number of Iranian website localizers. A questionnaire was given to 18 participants with varied degrees of expertise and experience who worked on website localization projects in either of English ⇔ Persian, Arabic ⇔ Persian, and French ⇔ Persian directions for at least 3 years. The participants of the study were asked to rate as many factors as they perceived crucial in determining the cultural content of websites. . . . The results of the study show that ideology, pictures, and symbols were considered to be the most important variables in website localization, while localization of branding was the trickiest."

Edward A. Malone

### **Document representation with statistical word senses in cross-lingual document clustering**

Tang, G., Xia, Y., Cambria, E., Jin, P., & Zheng, T. F. (2015). *International Journal of Pattern Recognition and Artificial Intelligence*, 29(2), 1559003-1 through 1559003-26. doi: 10.1142/S021800141559003X

“Cross-lingual document clustering is the task of automatically organizing a large collection of multi-lingual documents into a few clusters, depending on their content or topic. It is well known that language barrier and translation ambiguity are two challenging issues for cross-lingual document representation. To this end, [the authors] propose to represent cross-lingual documents through statistical word senses, which are automatically discovered from a parallel corpus through a novel cross-lingual word sense induction model and a sense clustering method. In particular, the former consists in a sense-based vector space model and the latter leverages on a sense based latent Dirichlet allocation. Evaluation on the benchmarking datasets shows that the proposed models outperform two state-of-the-art methods for cross-lingual document clustering.”

Edward A. Malone

### **Networked multilingualism: Some language practices on Facebook and their implications**

Androutsopoulos, J. (2015). *International Journal of Bilingualism*, 19(2), 185–205. doi: 10.1177/1367006913489198

“Integrating research on multilingualism and computer-mediated communication, this paper proposes the term ‘networked multilingualism’ and presents findings from a case study to explore its implications for the theorising of multilingualism. . . . The empirical part of the paper discusses the Facebook language practices of a small group of Greek-background secondary school students in a German city. . . . Focusing on four weeks of discourse on profile walls, the analysis examines the participants’ linguistic repertoires, their language choices for genres of self-presentation and dialogic exchange, and the performance of multilingual talk online. The findings suggest that the students’ networked multilingual practices are individualised, genre-shaped, and based on wide and stratified repertoires.”

Edward A. Malone

## **Language**

### **The behavioral and neural effects of language on motion perception**

Francken, J. C., Kok, P., Hagoort, P., & de Lange, F. P. (2015). *Journal of Cognitive Neuroscience*, 27(1), 175–84. doi: 10.1162/jocn\_a\_00682

“Perception does not function as an isolated module but is tightly linked with other cognitive functions. Several studies have demonstrated an influence of language on motion perception, but it remains debated at which level of processing this modulation takes place. . . . Here, [the authors] investigated whether language–perception interactions were specific to the language-dominant left hemisphere by comparing the effects of language on visual material presented in the right (RVF) and left visual fields (LVF). Furthermore, [they] determined the neural locus of the interaction using fMRI. . . . [Their] results suggest that semantic information about motion retrieved in language regions may automatically modulate perceptual decisions about motion.”

Edward A. Malone

## **Management**

### **The effects of leader motivating language use on employee decision making**

Mayfield, M., & Mayfield, J. (2016). *International Journal of Business Communication*, 53(4), 465–484. doi: 10.1177/2329488415572787

“This study examines the link between strategic leader verbal communication and effective employee decision making. Results show that leader communication (as measured by the motivating language scale) is significantly and positively related to augmented worker decision making. Structural equation modeling results indicate an expected 2.5% improvement in worker decision making for every 10% increase in leader language use. These results can be helpful to researchers and managers because they advance motivating language theory, and are easily understood as an applied communications framework for improving employee decision making.”

Katherine Wertz

## Professional issues

### **Disrupting the past to disrupt the future: An antenarrative of technical communication**

Jones, N., Moore, K., & Walton, R. (2016). *Technical Communication Quarterly*, 25(4), 211–229. doi: 10.1080/10572252.2016.1224655

“This article presents an antenarrative of the field of technical and professional communication. Part methodology and part practice, an antenarrative allows the work of the field to be reseen, forges new paths forward, and emboldens the field’s objectives to unabashedly embrace social justice and inclusivity as part of its core narrative. The authors present a heuristic that can usefully extend the pursuit of inclusivity in technical and professional communication.”

Rhonda Stanton

### **Human-centered design and the field of technical communication**

Zachry, M., & Spyridakis, J. H. (2016). *Journal of Technical Writing and Communication*, 46(4), 392–401. doi: 10.1177/0047281616653497

This article “explore[s] the turn toward human-centered design (HCD) in research and higher education. [Zachry and Spyrdakis] begin with a discussion of how HCD emerged in scholarly work at the edges of our field in places such as design, psychology, art, and engineering. [Then they] consider how an HCD perspective is manifesting itself in academic programs in different institutional contexts. [The authors] discuss how this trend is further illustrated by the transformation of [their] department at the University of Washington, which shifted from being the Department of Technical Communication to becoming the Department of Human Centered Design and Engineering.”

Anita Ford

### **Human-centered design in practice: Roles, definitions, and communication**

Putnam, C., Reiner, A., Ryou, E., Caputo, M., Cheng, J., Allen, M., & Singamaneni, R. (2016). *Journal of Technical Writing and Communication*, 46(4), 446–470. doi: 10.1177/0047281616653491

“Human-centered design philosophy proposes that end users be at the center of technical system designs. Building on a seminal study by Gould and Lewis, [the authors] present findings from two surveys that explored the practice of building interactive systems from the perspective of information and communication technology (ICT) professionals. [The authors] generated ICT job descriptions based on a lexicon derived from practitioners’ own words. [They] found that while ‘human-centeredness’ has risen among ICT professionals, . . . respondents varied significantly in how they considered the original three Gould and Lewis principles with respect to their job titles and roles. [The authors] . . . argue that tools that support clear communication among roles are critical.”

Anita Ford

### **The role and value of technical communicators: Technical communicators and subject matter experts weigh in**

Rice-Bailey, T. (2016). *Technical Communication Quarterly*, 25(4), 230–243. doi: 10.1080/10572252.2016.1221140

“This qualitative study compares how technical communicators (TCs) and subject matter experts (SMEs) characterize the role and value of the TC. Seven TCs and eight SMEs participated in an investigation of the similarities and differences between the perceptions of these two groups. Key findings are that SMEs perceive of TCs as investigators, educators, and relationship builders; TCs talk about themselves in terms of investigators, interpreters, and audience advocates; and TCs are often uncomfortable discussing their value.”

Rhonda Stanton



## Research

### **Correspondence analysis: A statistical technique ripe for technical and professional communication researchers**

Lam, C. (2016). *IEEE Transactions on Professional Communication*, 59(3), 299–310. doi: 10.1109/TPC.2016.2583279

“Technical communicators use a variety of research methods and collect a variety of data. Of particular interest to technical communicators is categorical data or data that are not traditionally quantitative. For instance, technical communicators often collect and analyze language data from a variety of texts. Analyzing this type of data can be difficult using traditional statistical methods.” Correspondence analysis is a methodology that enables “researchers to explore relationships among categorical variables” statistically. “To conduct correspondence analysis, a researcher must walk through a series of steps including: (1) determining whether correspondence analysis is appropriate, (2) choosing a statistical software package, (3) running the correspondence analysis, and (4) interpreting and applying the results. . . . While correspondence analysis provides many useful insights into categorical data, a researcher must consider several things when deciding to use correspondence analysis. These include the potential to misinterpret and misapply the results of a correspondence analysis.” This article provides “theoretical and practical foundations for understanding and applying correspondence analysis” in research projects.

Lyn Gattis

## Science writing

### **Science communication on YouTube: Factors that affect channel and video popularity**

Welbourne, D. J., & Grant, W. J. (2016). *Public Understanding of Science*, 25(6), 706–718. doi: 10.1177/0963662515572068

“YouTube has become one of the largest websites on the Internet. Among its many genres, both professional and amateur science communicators compete for audience attention. This article provides the first overview of science communication on YouTube and examines content factors that affect the popularity of science communication videos on the site. A content analysis of 390 videos from 39 YouTube channels was conducted. Although professionally generated content is superior in number, user-generated content was significantly more popular. Furthermore, videos that had consistent science communicators were more popular than those without a regular communicator. This study represents an important first step to understand content factors, which increases the channel and video popularity of science communication on YouTube.”

Lyn Gattis

## Theory

### **Found things: Genre, narrative, and identification in a networked activist organization**

Jones, N. (2016). *Technical Communication Quarterly*, 25(4), 298–318. doi: 10.1080/10572252.2016.1228790

“This article examines the inter-relational role of genre and narrative in a social justice organization. Employing an interdisciplinary approach, this text presents a process-centered approach using genre ecology modeling and narrative maps. This approach can help scholars understand how genre and narrative dialectically promote collaboration and coordination while simultaneously promoting the process of consubstantiality and rhetorical identification in networked organizations.”

Rhonda Stanton

## Usability

### **Evaluating multilevel user skill expression in a public, unsupervised wiki: A case study**

Trice, M. (2016). *IEEE Transactions on Professional Communication*, 59(3), 261–273. doi: 10.1109/TPC.2016.2592560

“This case study examines how users of varied experience levels interact with an open-access content-management system (CMS) that lacks managed leadership.” Specifically, the study “looked at the initial installation of a local community wiki system. The system is a CMS designed for use by municipal territories to create crowdsourced wikis capable of preserving knowledge that would not traditionally fit in Wikipedia entries. . . . This case study started with a series of interviews to determine how users expected to use the community wiki. After the interviews, 10 users (5 new and 5 experienced) were evaluated for this study, each performing 6 tasks. . . . Users who maintained sufficient interest in the wiki to become experienced wiki users developed a number of core skills even without organizational support, though new users demonstrated a steep skill deficit. However, new users actually demonstrated a greater capacity to highlight incompleteness of information within the wiki than experienced users in one key task.”

Lyn Gattis

### **Improving agile requirements: The quality user story framework and tool**

Lucassen, G., Dalpiaz, F., van der Werf, E. M., & Brinkkemper, S. (2016). *Requirements Engineering*, 21(3), 383–403. doi: 10.1007/s00766-016-0250-x

“User stories are a widely adopted requirements notation in agile development. Yet, user stories are too often poorly written in practice and exhibit inherent quality defects. Triggered by this observation, [the authors] propose the Quality User Story (QUS) framework, a set of 13 quality criteria that user story writers should strive to conform to. Based on QUS, [they] present the Automatic Quality User Story Artisan (AQUSA) software tool. Relying on natural language processing (NLP) techniques, AQUSA detects quality defects and suggest possible remedies. [The authors] describe the architecture of AQUSA, its implementation, and [they] report on an evaluation that analyzes 1023 user stories obtained from 18 software companies.”

Edward A. Malone

## Writing

### **Supporting technical professionals' metacognitive development in technical communication through contrasting rhetorical problem solving**

Karatsolis, A., Ishizaki, S., Lovett, M., Rohrbach, S., & Kaufer, M. (2016). *Technical Communication Quarterly*, 25(4), 244–259. doi: 10.1080/10572252.2016.1221141

“This article presents an experimental pedagogical framework for providing technical professionals with practice on writing skills focusing on the development of their metacognitive rhetorical awareness. The article outlines the theoretical foundation that led to the development of the framework, followed by a report of a pilot study involving information technology professionals in a global setting using an online learning environment that was designed based on the framework.”

Rhonda Stanton